THE SOUTHERN AGRICULTURIST.

(NEW SERIES.)

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For the Southern Agriculturist.

REMARKS ON MR. RHETT'S ADDRESS, AND MR. ELLIOTT'S EXAMINATION OF IT:

BY WM. WRAGG SMITH.

Mr. Editor:—Having attentively read Mr. Rhett's Address before the Agricultural Society of Beaufort, and Mr. Elliott's "Examination," and my convictions coinciding with those of the former of these gentlemen; the importance of the subject—the new views which it suggested, and its capability of further development and proofs affording interesting matter for the labours of the reviewer, I took it upon myself to prepare an article for one of the Reviews, a portion of which article, embracing the more prominent views of the question, I, at the same time, send to you for publication in the Southern Agriculturist, should its pages not be appropriated by matter more *immediately* relating to the interests of agriculture. Did I not think with Mr. Rhett that agriculture has not unfrequently suffered as much from the prejudices of friends as of enemies, and that the theory I advocate may do it much good, without doing it any harm; did I not believe that a country attains wealth in proportion as its inhabitants create wealth for themselves, without any regard to the prejudices in favor of any particular branch of industry, as each individual has an accurate perception of what is to him the most profitable employment, as opinions are liberal with respect to the productiveness of all labor having an exchangeable value, and as, consequently, the freedom and equality of all industry are more or less perfectly promoted and enjoyed; and were I not persuaded that the attempts to revive agriculture by the application of the old theory, which considers it the sole source and only basis of national wealth are suicidal, inasmuch as it is the effect of this theory to accumulate taxes upon agriculture, while, at the same time, it invites by its plausible deductions, and flattering encomiums, to a drowsy and insensible pertinacity in the cultivation of the land, or of a particular product, however unfavorable the circumstances, tends to prevent the direction of labour and capital to other employments, by which the mass of wealth would be increased, and to lead astray the mind in its appreciation of the true causes of agricultural revenue; were I not animated in the cause of agriculture, at the same time that I stand up as an advocate for that doctrine which establishes the right of *mind* to be considered in Political Economy a producer equally with *nature*—

which recognises, as productive, immaterial as well as material labour, I should not, Mr. Editor, have deemed these remarks entitled to a place in your columns. But as I conceive that what the Agriculturists formerly admitted, when prejudices were stronger, that "the establishment of perfect justice, of perfect liberty, and of perfect equality is the very simple secret which most effectually secures the highest degree of prosperity to all the three classes"* (proprietors, cultivators, and the then considered unproductive class) ought to be admitted now, if it shall be proved that other classes as well as manufacturers, and merchants are producers, their recognition as such should advance the interests of agriculture.

In the former part of the subject I had treated of the nature of rent and of the fallacy of the argument which pretended that the surplus income of the land constituted that peculiar feature of productiveness which is denied to other subjects of industry, shewing, as Mr. Rhett has done, that it has its existence only in a different form of the distribution of profits; but differing from him and Mr. Ricardo in calling rent the badge of diminished production, since it seems properly to be occasioned immediately by *increased* production, and the *relative* fertility of the land;—and taking a more extended view than Mr. Rhett has done of those general notions of the natural productiveness of land, which this admission would seem to favor, explaining how we have rent in the shape of market value of land, and how this surplus of the land might increase like rent under the same circumstances;—and considering an objection which he overlooked: that there cannot be two rates of profit—competition equalizes the profits of farming, manufacturing and commercial stock; yet say they, agriculture still yields in addition rent—an objection which puts mere farming stock upon a par with large capital, and to which I have replied, moreover, that a factory can pay rent as well as land, and that commercial profits support navigation and freight, besides creating wealth for the merchant. I then went on to consider the importance attached to the land as producing the necessaries of life; the rapidly increasing demand for them which, according to Mr. Malthus' theory of the geometrical and arithmetical ratios of population and subsistence, must make the cultivation of the land not only essential to the real wealth of a people, but an employment incumbent upon the present generation, and satisfied myself, upon reading over Mr. Malthus, that his book has been the cause of the adoption of some erroneous maxims, not applicable, at any rate, among a new or an intelligent and industrious people, made the calculation, that a hundred rice planters would suffice to support the present population of South-Carolina, and found that in rich and crowded old England, not more than one-fifth of the population is engaged in agriculture, notwithstand-

* Wealth of Nations, vol. iii., B. iv., chap. ix., p. 13.

ing they cannot import Corn. Other checks, too, not dependant upon subsistence, are continually keeping down a population. The time, were this state twenty times as populous as it is, might be "*fruges consumerenati*," indefinitely postponed when the literal application of the appellation to those classes who did not cultivate the land, could be justified, and the funds for the subsistence of labour fail through the means of these unprofitable members of the Society.

I am respectfully, Mr. Editor,
Your obe'dt. serv't,
WM. WRAGG SMITH.

EQUALITY OF PRODUCTION.

1.—"*Who is the Producer?*"—An Address delivered before the Beaufort Agricultural Society, August, 1840, by Edmund Rhett, Esq.

2.—An examination of Mr. Rhett's Agricultural Address, by Wm. Elliott, Esq.

But we become more bold as we take leave of these dim and remote regions of speculation, into which we have been led by Mr. Malthus, and take up the question as it presents itself to us in these our days of comparative ease and plenty, and in an agricultural community like South-Carolina, and hope as we approach the gist of the subject, to make clear the proposition, that in Political Economy all labor, skill, and talent, which has an exchangeable value is to be termed productive, and that no one set of men can claim precedence over another, upon the ground that this or that industry is, in itself, a source of greater national profit than another, while there exists freedom of competition and activity of intelligence, and the same fitness of things, which produces harmony in nature, produces in the Political Economy of a people its sum total of prosperity and wealth. Not that we are to be understood as denying the superior profitableness which, according to circumstances, one branch of industry may indubitably possess over another; but as simply affirming that in the actual state of things, as a general proposition, capital, labor, and skill will always find out the best investment, and that not only have we no right to prejudge a man, and suppose him unprofitably employed both for himself and for his country, when he is the best judge of his own interests, and through them may be contributary in the best manner he can, to the common wealth; but we should also go further, and inquire into the incidental and auxiliary effects immediate and remote, which such employment has upon others, and whether, without it, they would not be diminished in value.

We have said that the second source of error upon this subject is *in imagining a nation to be more prosperous and wealthy the more it is exclusively agricultural, when the fact is, that it is never more so than*

a diversity of employments exist, regulated and limited by the simple law of demand and supply. Mr. Malthus himself tells us that the measure of population is not the quantity of food, but the quantity of employment; and that the latter does not vary from year to year in the same manner as the quantity of produce must necessarily do, and consequently the check from want of employment is much more steady in its operation, and favorable to the lower classes than the check from the immediate want of food.*

It is evident that in the case before stated,† were there no diversion from agricultural employment, the wages of labor would be too low to purchase the necessaries of life, yet the country might be exporting an immense quantity of produce. All the wealth of the country would be absorbed by a few men of capital and landed proprietors. Or under peculiar circumstances a similar effect might follow to profits from an opposite cause—from the too high price of labor. Capital would in such case desert the land. Thus the demand for slave labor in the South Western States, and the consequent high price of negroes, and drain of them out of South-Carolina, has had the effect of diminishing considerably the profits of the planter. Some were induced to convert their negroes into money. The price of the best lands might not fall, or not in a sufficient degree to compensate for the high price of labor, either in consequence of their scarcity, or of a fictitious value being attached to them, or of the labor employed upon them having formerly cost less, or of the tenacity of agricultural habits and prejudices: and the dearness of labor might deter from the occupancy and cultivation of new or inferior land. Causes, too, may exist affecting the price of produce. Under such circumstances, were agriculture persisted in, under the infatuation that it was the only solid source of national wealth, it might, on the contrary, involve the country in debt and ruin. A country under these depressing circumstances, of its agriculture, would be in no wise better off than one possessing an ungrateful soil. Suppose the cotton planter of Alabama to purchase negroes at a high price, upon credit in South-Carolina, and to be induced, from exaggerated representations of the fertility of the soil, to give a good price for his land to the proprietor, who is a land speculator, residing in New-York. When his cotton comes to market and is sold, he finds his whole income absorbed in his plantation expenses, and the interest money upon his land and negroes. All his supplies he has purchased at a high rate from Northern merchants. He probably finds himself in debt year after year. Now, what wealth has he created for Alabama? Evidently none. It is far from being true, that a country, merely because it is agricultural, and abounds in the productions of the soil, or because it

* Malthus on Population, B. iii. chap xi.

† Where a population is dense, and the supply of labour greater than the demand.

exports these productions, is wealthy. There must be a vent abroad, or a demand at home for the surplus produce, in the first instance, or there would be no revenue—that is, nothing to spend; and in the second, the surplus exported may not return any benefit to the planter, or to the State generally. It may be mortgaged unto the few, or the whole gross value may be dissipated out of the State, leaving no surplus at all.

It has been a question which has the order of precedence, population or agriculture; or whether, as Sir James Stewart expresses it, multiplication is the efficient cause of agriculture, or agriculture of multiplication. A question easy of decision in our slave States; for an unnatural increase of agriculture, by keeping up the high prices of land and labor, by outstripping the supply of labor, and by diverting industry from the manufacture of many articles of consumption which could be purchased cheaper if they were made at home, and competition was excited, would tend to depopulate a State. The consequence would be emigration to newer States where land could be got cheaper; a farther diminution of the supply of labor and its consequent enhancement of price; emigration elsewhere of individuals who would give up planting, and seek to retrieve broken fortunes in some other employment, and of other portions of the community for whose productions the planting interest had not sufficient surplus to exchange. On the other hand an accession of the laboring population would would give a natural stimulus to agriculture: the surplus revenue of the land would increase: labor would be employed in trade, and commodities be had cheaper; and the surplus revenue would invite the professions and arts.

It is the increase of population attendant upon the increase of industry—upon the support arising from various employments, which at the same time that they invite demand by offering objects of gratification, are regulated by it—upon the increase of capital and the consequent demand for labor, that raises up the necessaries of life, that creates a demand for the productions of the soil. It is not, as Mr. Ricardo justly observes, the abundance of necessaries which raises up demanders; but the abundance of demanders which raises up necessaries.* What motive would the planter have in producing moore than the food which he and his family would consume, if he did not desire to obtain some of the comforts and gratifications, which it is the business of different classes in society to *produce* and sell to him. If he did not wish to clothe himself and family respectably—to have his daughters taught music—to be able to go during the gay season to the Theatre—to afford to pay for the valuable services of a physician, a lawyer, or a french cook, and to buy books, paintings, &c.

* Ricardo's Pol. Econ. p. 427.

Must not these classes, then, plead ignorance to the charge of idleness and unproductiveness under this aspect? Agriculture, under favorable circumstances, is the great river or reservoir; but these various trades and arts are the dispensing streams and conduits which convert into active use the fertilizing properties that would otherwise remain sluggish, inert, and confined, and disseminate wealth through a country. Through them is devised the only natural and efficient mode by which the wealth of a community may be increased, and a just distribution made of property and subsistence. Under those systems of equality which have been imagined by certain Utopian philosophers, apart from the practical impossibility of assigning to each individual an equal share, in determining the portions of fertile and unfertile land, and providing for the difference of increase in families, the cultivation of the land would be but feebly carried on. The surplus of superior industry or fertility would be wasted, as there would be no use for it. Those who were naturally incapable of exertion, or who owned an unfruitful soil, would perish from starvation, and the number of these would always be rapidly increasing as society, deprived of its civilized impulses, degenerated into the savage state, while it would not be long before the needy would depredate upon the resources of their richer neighbors, until rapine and war would finally create a convulsion and a new order of things. It is not in the power of political institutions, to prevent a disproportion of conditions. Property will tend, as society progresses, to accumulate somewhere; and though it may not, at an earlier period of society, continue for any length of time, so visibly in the same class or family under the check of laws distributing inheritance equally, and unfavorable to privileges and monopolies, it will, at a later period, after most of the lands are taken up, the population has become denser, the demand for the necessaries of life strengthened, the supply more monopolized, and the laws of production more regular and constant in their operation, concentrate itself in the few. Under the steady operation of those principles which bring it into existence, wealth, like snow, will gather as it tolls; and and he who is born with a pewter, instead of a gold spoon in his mouth, may be put to shifts how to live. If it is capable of demonstration that the energies of the society to support its members are not worn out; but may be increased to any extent, it would be possible to remove the causes of poverty. Either the individual himself, his parents, or his government, have to answer for its existence. We know that it exists in countries where the population is comparatively thin, and whose resources, properly developed, would suffice to maintain in ease and plenty a thousand times as many. As ignorance is the dark nurse of sloth, that government which does not make ample provision for the education of its citizens,

impoverishes them by its neglect. If a man is costitutionally indolent he can only blame his own nature. That the government should see to the bringing up of the children of the poorer class, whose parents may have neglected, or have been unable to perform this duty, may not be so obvious; but there can be no doubt that the cause of much poverty is inattention to youth in this respect. Unenlightened views of political economy, the favoring of certain classes of industry at the expense of others, the griping exactions and selfish special legislation of a government or party in power, the insecurity of property—in one word, bad government, is the fruitful source of perhaps all the poverty which is ascribed to the redundancy of population. For do we not see countries where there is no redundant population, sometimes suffering, as ours is at this moment, from embarrassment, property sacrificed, many made beggars, and the poorer class in want of employment and bread?

At the same time we heartily approve of much that Mr. Malthus has said in condemnation of that turbulent disposition and revolutionary spirit which prompts the discontented and the ignorant, to call to account government or society for those evils of which they are themselves the authors, or which are unavoidable in nature, and repudiate with him any right which man may be thought to possess, to subsistence, when his labour will not fairly purchase it. "If a man will not work," says St. Paul, "neither shall he eat." The abstract rights to liberty—to happiness—and to the fruits of the earth, are not rights at all, before the establishment of organized society and the institution of laws. He only who had the power would have the right. It was to enable all men equally to enjoy these primary objects of life that governments were erected. But these ends could not be attained without certain conditions. It might be neecessary that one of these objects should be surrendered, in order to obtain the others. Thus, revolutions have frequently ended in despotisms. In endeavoring to better their conditions, or to remove necessary evils, men often violate some great fundamental law of society, or so impair its sanction, that the same evils recoil with double force upon their heads, accompanied probably by other and worse evils.

With a government possessing an impartial eye to all interests, liberal in opening new avenues to industry, not pragmatically interfering with the natural laws of barter, encouraging the cultivation of idle lands, if they were needed, and inducing the wealthy to spend their revenues at home, instead of abroad, either by inviting to useful outlays and the creation of fresh capital, or by gradually furnishing those objects of gratification which are sought for elsewhere, imposing few taxes, and enacting no laws, the burden of which would fall upon the poorer classes, admitting the lower orders, as far as consistent with good, to some share in, the government, thereby giving them an interest, and a degree of self respect

conducive to industry and improvement; and leaving able bodied poverty to take care of itself, if it could not furnish it with employment—and with a system of parochial education by which the poor and ignorant should be enlightened upon the fundamental truths of government and political economy—taught to feel the sanctity of property, and to know that upon the justly acquired riches of others, rests their only hope of maintenance, since it is only by the means of inviolate property that the greatest amount of produce, orthe funds of subsistence can be procured—taught the laws of demand and supply—the rudiments of such arts as they would be most likely to find a maintenance by, and the knowledge that their happiness or misery depend upon themselves;—with such institutions, though property should accumulate in the hands of landholders and capitalists and population make immense strides, Mr. Malthus' favorite conclusion that misery will be occasioned by a deficiency of food does not seem necessary.

Man does not live by bread alone—but by the wages of any employment which he can get. The effect of demand for bread, and its high price would be to create a demand for labor to cultivate more land. As it is by means of labor that money is obtained wherewith the laborer purchases the necessaries of life, and by labor that food is produced, it is properly *labor* and not *the necessaries of life*, that creates its own demand. "If," says Mr. Malthus, "the necessaries of life, the most important products of land, had not the property of creating an increase of demand proporitoned to their increased quantity such increased quantity would occasion a fall in their exchangeable value."* Ifthe quantity produced is greater than the actual demand for subsistence, the laborer would be better off, and population would thrive, of course. When the demand begins to increase, and the price of corn to rise, these would be an increased stimulus to cultivation, for, the condition of the laborer becoming worse, there would be a greater supply of labor in the market, and by competition it would become cheaper, whereby the profit of the farmer would be enhanced. As the natural price of corn can never fall below the cost of production, and because each fresh addition to the raw produce of the country is procured at a greater cost, with a greater quantity of capital and labor, with the progress of population in old countries, corn must rise in price, and its marketable value or the excess of price over the natural price, created by the demand, is the motive for its increased production. But the natural price of labor also rises, and keeps pace with the natural price of corn by which it is regulated, and when there is this additional demand for labor to cultivate more land, there will be a competition for it among other employments, and it will have a marketable price also. With the increase in the natural price of

* An Inquiry into the Nature and Progress of Rent.

raw produce and labor which enter into different commodities, their natural price would tend also to increase; and their real value is in fact enhanced. But on the contrary, as Society progresses, these commodities become cheaper. And why so? In consequence of the *productive powers of skill*—the improvement in machinery—the inventive processes of *mind*, by which a greater quantity of these commodities are produced in proportion to the cost, in the same manner as the fertility of land is the cause of a larger surplus.—But the effect of these improvements is to stimulate demand, by rendering commodities cheaper; and this is not the case with manufactures alone; as population increases all trades, professions, and arts increase. Where the utility of any profession, or the gratifications afforded by any art, has not been introduced and experienced, there would be no demand fot it. Food is a demand of nature—instinct prompts us to find it; we do not wait to have its properties of relieving hunger explained to us. But it is not so with the mere superfluities of life; and as the fashion of a thing increases, its use, or the demand for it increases. This demand furnishes increased employment, and the supply and competition of trade, professions, &c., cheapen the values furnished by them, which again stimulates demand, while population is stimulated by the fresh employment. We think, therefore, that we have demonstrated that, so far from it being a quality peculiar to the necessaries of life, of being able to create their own demand, or to raise up a number of demanders in proportion to the quantity of necessaries produced, it is much more a property of the superfluities of life.

But it will still be insisted, perhaps, that the peculiar productiveness of agriculture is the pure gain always accumulating to the landholders as the prices of raw produce, thus contiuue to rise with every fresh accession of population and difficulty in production,—the perpetually increasing rent, or the planter's increasing profits, or the additional value given to lands and negroes. Hitherto we have taken it for granted, that the increasing demand for subsistence forces the cultivation of inferior lands, and that subsistence is only to be had at an increased cost of production. But this is supposing that there are restrictions upon the importations of subsistence—that the markets of the world are closed. It is the case in England under the operation of the Corn laws; and what clearer proof can there be that Agriculture is not naturally more productive than other industry, than the reasons which the advocates of the Corn laws give against their repeal, that it would be the ruin of the agricultural interest of England? It is plain that our error on this subject has arisen from taking as truths of political economy the results of a partial system of monopoly.

There might be a permanent increase in the price of rice, if it was an article of subsistence more generally used, if its place could not

be supplied by other breadstuffs, if there were no other portions of the globe which might compete with this in its production; and if the supply of slave labour (the only labor by which it can be cultivated with us,) should continue to be deficient in proporiion to the demand. But do not these circumstances check at the present moment, the culture of rice? Have we not seen how agriculture might suffer under the operation of such causes?

But admitting the fact as a probable one, that an increased population, an increasing demand, and new markets, extend cultivation of one kind and another, and accumulate the values of property, agriculture does not in this way create more wealth than any other exchangeable industry. The manufacturer, the doctor, or the lawyer who sets up in a village finds his profits increase as its population and capital increase. Demand will excite competition; the supply will regulate itself by the standard of profits: as in the case of land, greater fertility will produce greater rent or profits, so here the greater skill and talent will command the most money. So many additional capitals are accumulated in the community. It is needless, after what has been already said in proof of the identity of rent and net profits in any trade or business, to stop here in order gravely to refute the notion of the Economist, that artificers, manufacturers, and merchants, can augment the revenue and wealth of their community by parsimony only.* The increased employment of labour in these branches of industry is an aggregate of so much added value.

[To be Continued.]

For the Southern Agriculturist.

Mr. Editor:—Believing that many Rice planters are uninformed of the valuable communication I herewith transmit to you for insertion in your monthly periodical, I hope you will think it of sufficient importance to give it publicity. It is from the pen of the late venerated Gen'l. Thomas Pinckney, and its utility to an unfortunate Rice planter, under the predicament to which it has reference, is of incalculable advantage in the saving of labor and expense, and in most effectually repairing the injury sustained.

With much respect,

Your most ob'dt. serv't., HUGH ROSE.

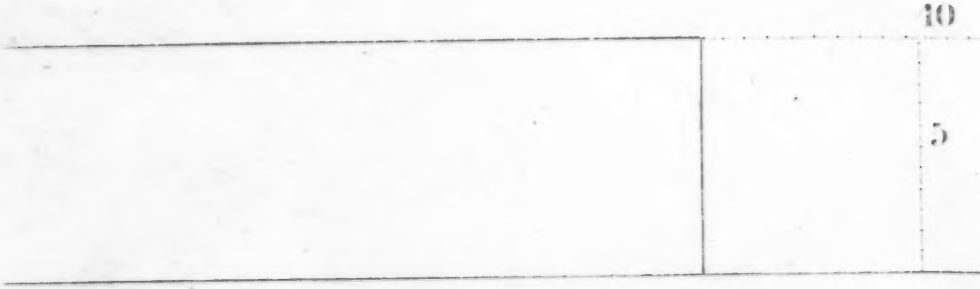
Charleston, June 17th, 1841.

ON THE USE OF FASCINES IN STOPPING BREAKS OR CREEKS.

BY THE LATE GEN. THOMAS PINCKNEY.

To the President and Members of the Agricultural Society of South-Carolina:—

THE construction of banks capable of protecting from inundation the low grounds adjacent to our rivers being indispensable for the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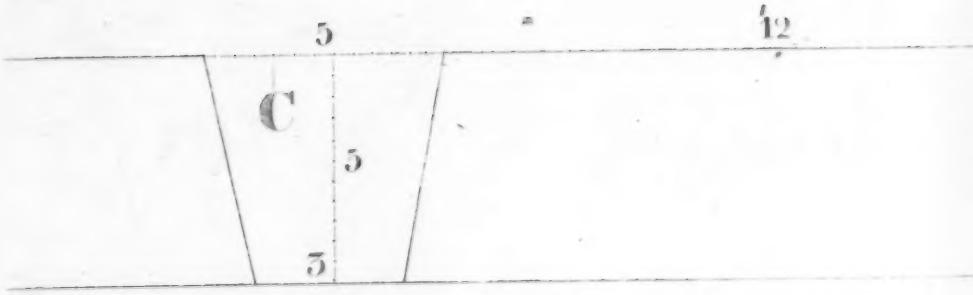
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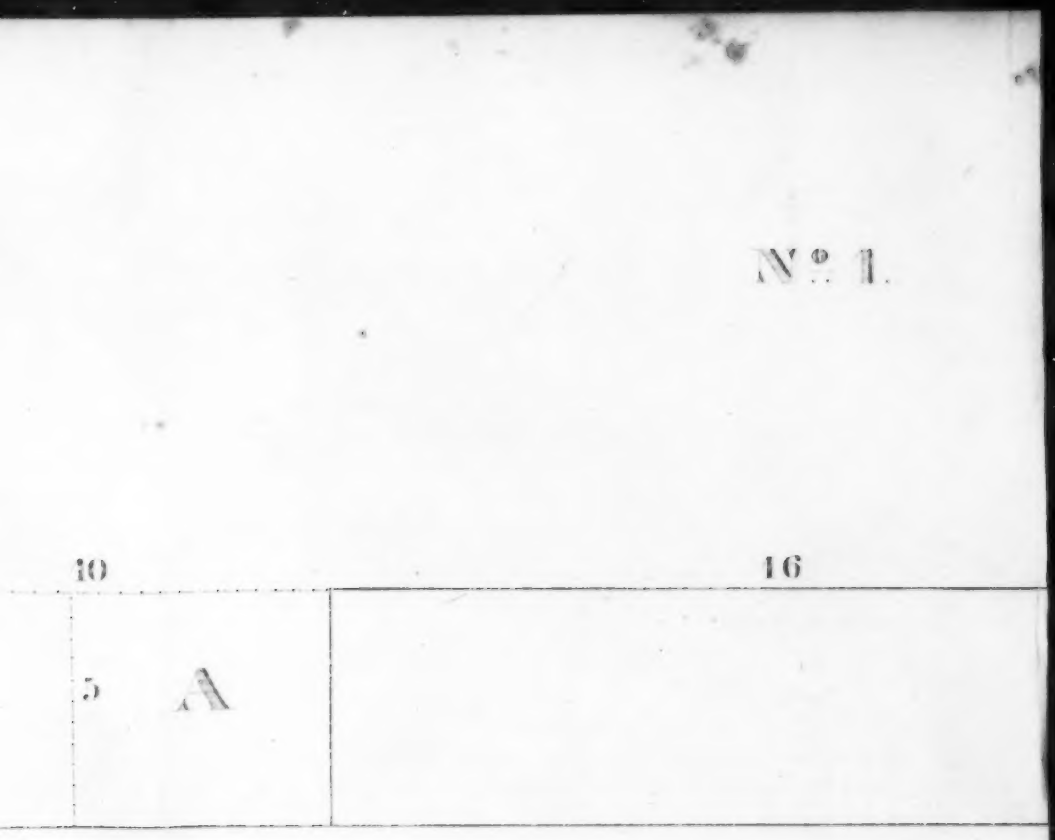
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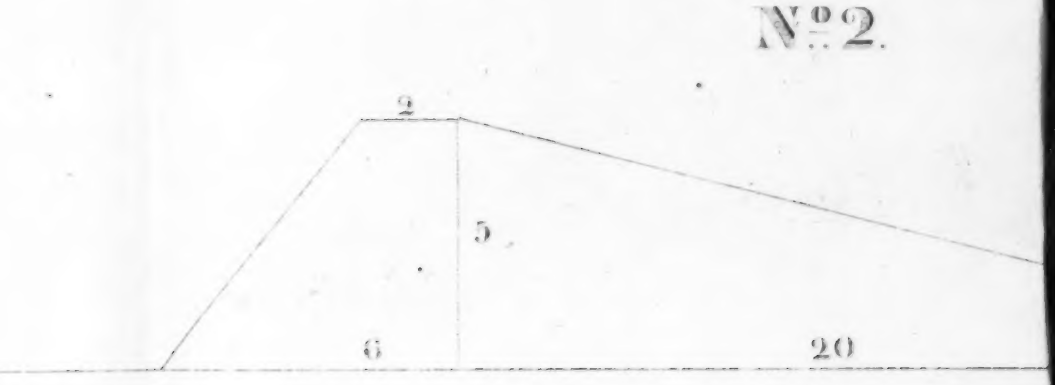
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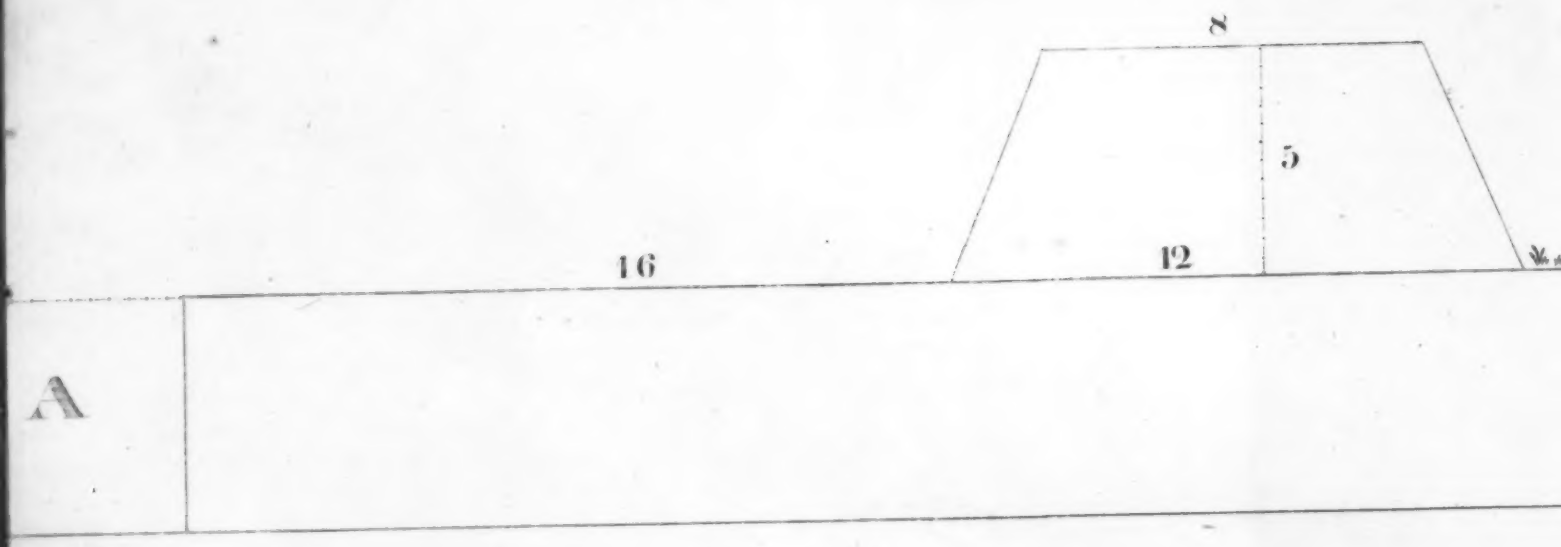

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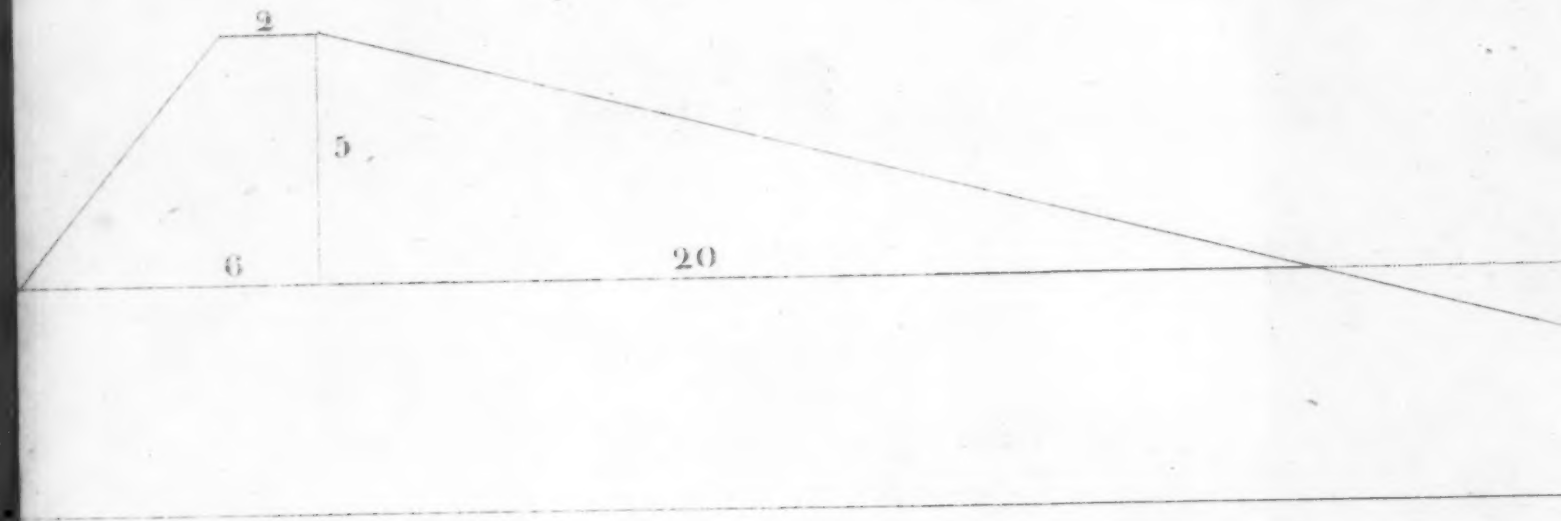

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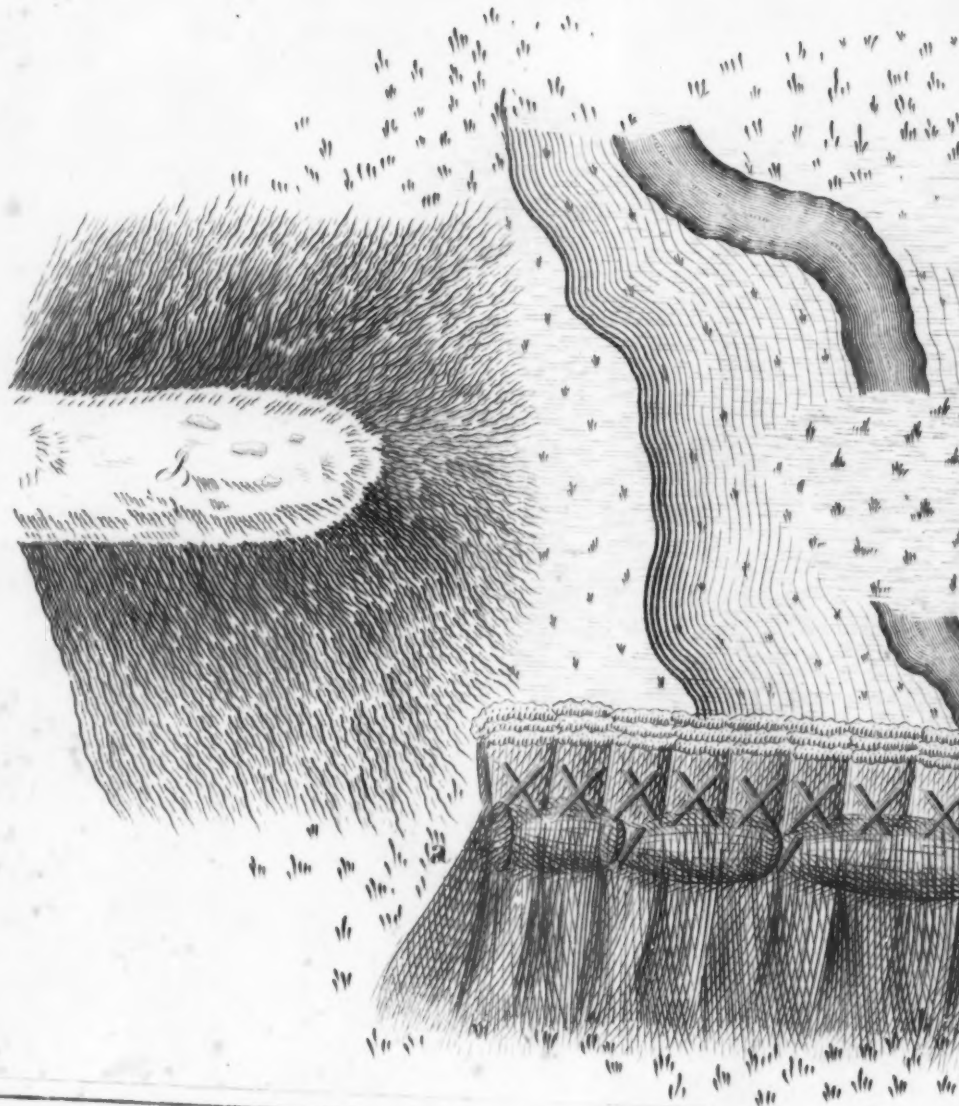

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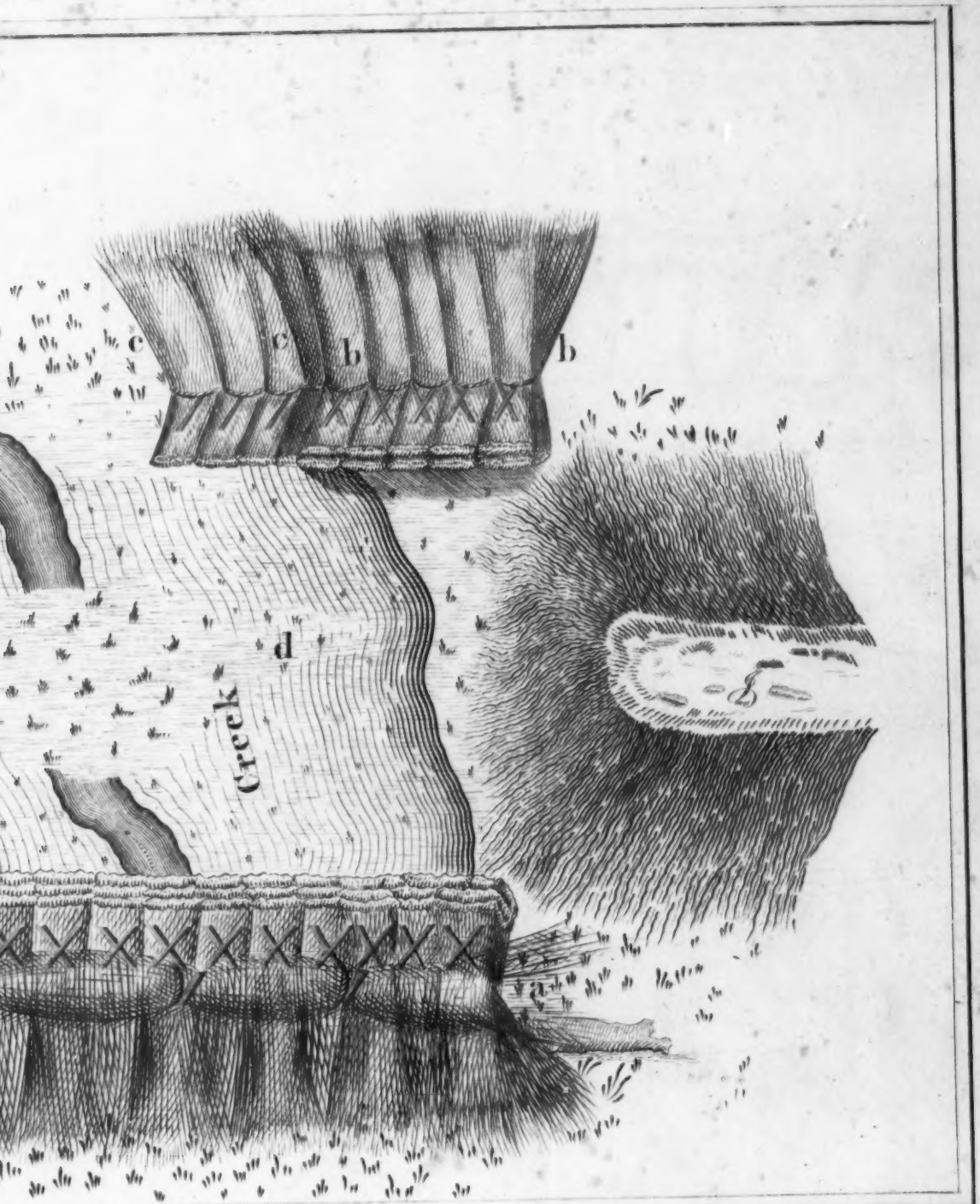

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secure cultivation of the most fertile portions of our territory, I have thought it might be acceptable to submit to the Society such ideas as theory and practice have suggested to me, in the course of long attention to this subject. And being of opinion that the form of the bank generally used among us is not the most advantageous, I herewith offer a drawing of the section of the bank now, and for many years, generally adopted in the maritime parts of our State, marked No. 1, and of that which is thought to be an improvement upon it, marked No. 2, with the view of explaining my ideas, aided by the comparison. *(Vide: Plates annexed.)*

The properties of a good bank may be assumed to be strength to resist the force of water; tightness or security from leakage; durability; cheapness of construction; and facility of repair. An examination of the form of these two banks will enable us to judge which has the superiority in these points. It will thence appear, that while the rising water must press against No. 1, it lies in a great measure upon No. 2, thereby consolidating rather than weakening it. And as the stability of all elevations mainly depends on the extent of the foundation exceeding that of the superstructure; and the base of No. 2, being twenty-six feet, while that of No. 1 is but twelve, the advantage derived by the former will be in proportion to these numbers; so that while No. 1 could only resist a pressure equal to twelve, No. 2 could support one of twenty-six: this has therefore, more than double the stability of No. 1. And in case of the water being much agitated by violent wind, the surges would dash nearly at right angles against the almost perpendicular side of No. 1; which must be greatly injured thereby, while the inclined position of No. 2 offering less direct opposition, the waves would flow up it like the surf on the sea-shore, and retire without injuring it. In case also of a rapid movement of the stream in a direction of parallel to the bank, it would easily cut into and undermine the summit of No. 1. while it would only extend itself up the easy slope of No. 2. The first property therefore of strength to resist the action of water, appears to be in favor of No. 2.

With respect to the ability to resist leakage, the advantage seems to be on the same side, because it is evidently more easy for water to percolate through a stratum of twelve than of twenty-six feet. But to exemplify this with more precision, let us suppose that the water has risen four feet perpendicular over the surface on the outside of both banks, this water, in its full depth, would come in contact with No. 1; and as water acts equally on all sides with a force proportioned to its height or depth, it would here press with the strength of a column four feet high, in forcing the fluid through the pores or interstices of the twelve feet of earth which compose this bank in its widest dimension; but where No. 2 is only twelve feet thick, the bank is so elevated that the height of the column of water on it is but one foot and a half, and its power of forcing through this

equal stratum of earth would be in proportion thereto; consequently No. 1 would be more liable to leak, than No. 2, in the proportion that four bears to one and an half, or the advantage that No. 2 has over No. 1, as respects freedom from leaks or tightness, is as eight to three.

With respect to durability, by fitness to resist the other destructive operations, to which banks may be exposed: violent rains, the trampling of heavy animals, and perforations made by small ones may be considered as the principal causes of such destruction.—Now it is evident that rain water would descend with more velocity and consequently with more force, down the side of No. 1 than of No. 2, and would carry with it more of the earth of which it is composed. It is also apparent that the materials of the surface of these banks which might be displaced by the trampling of heavy animals, would more readily roll down the precipitous side of one, than the easy slope of the other. Cray-fish, also fidlers and snakes, having more than double the distance to travel through it, would be best opposed by the widest foundation. To which may be added, that grass which grows best on the flattest surface, affords additional security to the surface of No. 2.

It appears then, that with respect to the qualities of strength, tightness and durability, the form of the bank recommended (No. 2,) has the advantage.

In considering the cheapness of construction, it remains to be proved that these advantages, however important, do not cost more than they are worth, by shewing that the labor employed in constructing No. 2 does not far exceed that of No. 1.

On reference to the numbers which designate the dimensions of the ditches A and B, it will be found that any given length of each contains the same number of cubical feet, of the earth which is to be removed to form the corresponding bank: so far they are equal; but it is evident that it requires much more labour to raise a weight perpendicularly than to remove it horizontally: the difference of the forces necessary to be applied in the two cases might be ascertained from the principles of gravity; but it may be sufficient here to assume, (what an experienced spadesman will scarcely controvert,) that it is at least as easy to pitch a spadeful of earth ten feet horizontally, as to raise and deliver it from a depth of five feet.—The usual day's work of one hand in the ditch A being ten feet in length, it is evident that the labourer must raise one hundred cubical feet, from the bottom of the ditch, five feet to the surface; while the labourer in the ditch B in the same length of task, would have to raise only ten cubical feet; this is an advantage in his favor of ten for one; he will however have to remove this earth twenty feet, while the labourer in A will on an average have only a distance of five feet to convey his horizontally to its edge; this therefore is an advantage in favor of A of four for one; which being subtracted

from the ten for one gained by B in the perpendicular lift, still leaves the advantage to B of six for one. This advantage of course diminishes as the surface is approached, and on account of the form of B, this calculation cannot be precisely exact; but in practice the facility of execution on the whole is so decidedly in favor of B, that I have always found that fifteen feet in length of this ditch could be executed in the day, while only ten feet of the former is the usual task. This it must be observed, relates only to so much of the bank as is comprised between the ditch and the dotted line F. To complete this bank a small inner ditch is formed, (marked C.) which affords the earth for the interior talus, and at the same time serves to drain the field. Thirty feet of this ditch is the usual day's task. One labourer then, with one woman to put up the bank, will in two days execute thirty feet of the exterior ditch and bank, and in another day thirty feet of the corresponding inner ditch and bank; while in the same three days the labourer in A, with his assisting woman will have performed no more than the same length. The labour then of construction is equal, and if the bank No. 2 is better than No. 1, it is of course cheaper.

With respect to the last property, facility of repair, this must depend in a great measure on having a supply of materials necessary for the purpose, within a convenient distance, and this is furnished in a short time by the exterior ditch B, which is speedily filled by the earth of alluvion; which, consisting generally of clay, affords a supply of the best material, within a convenient distance; while the ditch A being within the banks and kept more generally dry, affords fewer opportunities for the deposit of the sediment of water; and even if it had an equal advantage in that respect, the ditch B being double the width of A, would of course receive double the quantity of alluvium.

I have thus endeavored to shew that the bank No. 2 is superior in strength, tightness, durability, cheapness of construction and facility of repair to those in general use; and having many years experienced its efficiency, I can safely recommend its adoption. I will now proceed to describe the mode of executing it. The ground being marked off by stakes, as usual, the ditcher takes his station in his task on the outward line of the ditch, which is usually placed within a few feet of the river; he there digs down to the bottom of the ditch, throwing each spadeful as he proceeds, as far as he can, toward the inner line of the ditch, where a woman, his partner in the task, is stationed, who removes with her hoe, to the inner part of the bank, the earth pitched to her by the spadesman; and the gentle acclivity of this bank rendering it unnecessary that the excavated earth should remain to become more dry, before it is formed into the bank, as is the case in the common mode it is at once placed in its proper position. After the spadesman has attained his full depth on the outward line, he proceeds inward, observing to diminish the

depth according to his progress; this part of the operation requires the most attention, but practice soon renders it easy, and after the excavation is roughly made, a strait rod laid on the surface from the top to the bottom of the ditch enables the labourer to give it thereby the proper form; a similar process serves for trimming the bank. It may be observed, that by thus proceeding the most difficult part of the task is executed first, while the labourer is unfatigued; and the latter part of it requires so little exertion, that he is much encouraged by finding his difficulties diminish as he proceeds, while in the ditch A the reverse occurs, and the workman finds towards the close of the day that the most toilsome part of his task is still to be executed. This moral advantage will be properly estimated by those who have observed how much the encouragement of hope facilitates labour.

It may be proper to remark, that the bank here recommended, is drawn under the impression that it is sufficiently elevated to keep out the highest spring tides; where that is not the case, a greater elevation must be given, observing always to have four feet of base for one of height. And where from freshets or any other cause banks are liable to be frequently overflowed, a much wider inner talus should be formed. In our high river swamps I should be of opinion that the inner ought to be equal to the outward slope.

As connected with this subject of the construction and repair of banks, I will take the liberty of describing the mode which I have found most effectual in securing the creeks which frequently intersect the course of the bank; as well as stopping any considerable breaches which may be made by storms, freshets, &c. The usual mode in this our timber country, is to drive down several pair of large posts across the breach, parallel with the sides of the standing bank, and to unite the tops of each pair by a cross timber morticed on their tops; then driving a row of large and strong puncheons into each side of the breach, supported by horizontal timbers, which rest against the capped posts; the earth to form the bank is then thrown between these rows and kept in its place by the puncheons. This makes a tolerable temporary stoppage; but as the puncheons cannot form a tight joint, the earth piled perpendicularly within them is constantly escaping: and the wood which is exposed to be wet and dry alternately, twice in twenty four hours, speedily rots and no longer affords security to the bank.

The mode I recommend is to use fascines instead of timber; for this purpose a number of them, proportionate to the size of the creek or breach, are prepared; they are composed of bushes, or the smallest branches of trees, cut into lengths of six feet; a sufficient quantity being placed in each, to form when well compressed a diameter of a foot; and firmly bound in the middle by a vine or by a switch of white oak, osier or other tough wood, each about the size of a man's finger, and six or seven feet long, a noose or

loop is made at one end of this bind, which is passed under the middle of the fascine, and the other end being brought round is passed through the loop and drawn tight, the labourer placing his knee upon it to compress it strongly; the bind is then passed again round the fascine and its end inserted carefully under the noose, to prevent it from slipping: a strong stake of about two inches diameter, and six or seven feet long is prepared for each fascine, and a quantity of earth commensurate with the width or depth of the creek or breach being prepared at hand, a row of fascines is laid across the aperture, in a line parallel with the exterior talus of the banks, in the following manner: a fascine is placed firmly down with the but inside, perpendicular to the bank the end of which it joins, and a stake is driven through it, passing below the upper side and above the lower side of the bind; this should not be driven perpendicularly, but with the head inclining from the bank near which it is placed toward the opposite side, in the direction which the row is to take; it must not be driven entirely in, but the end must be left six or eight inches above the fascine; another fascine is then placed by the side of the first, and secured by the stake in the same inclined position and the row is continued across until it reaches the bank on the opposite side; here a fascine must be placed at the top of the last of the first row, but drawn back so much as to let the bind of the second tier lie close behind that of the first; this is secured by a stake driven into the ground through both fascines, inserted through the bind of the upper, but drawn in a direction exactly opposite to the stakes of the first row, whereby their ends cross each other in the form of the letter X, and the two tiers are firmly bound to the bottom; this row is continued across as the first, and as many more added as the depth may require; but when they have risen a foot or two above the surface, or so much as may be necessary to secure the bank, long fascines or sancissens, from sixteen to twenty feet in length, with a strong bind every three or four feet, are placed across the middle of the other fascines from bank to bank, and well staked down, the more firmly to bind the whole together: this is called the string piece. When the outward side of the breach is secured a similar barricade is made on the inside, or if workmen are plenty, both may be carried on at the same time; observing that the clear distance between them should be equal to the base of the bank; the earth is then thrown in and the bank formed; covering the top of the fascines also with earth. As it frequently happens, that the cavity, even at low water (at which time this work ought always to be begun) is so deep that the fascines cannot be laid dry on the bottom, two fascines or as many more as will be sufficient to reach from the bottom to the surface of the water, are fixed through their binds on one stake, which is driven down as before described, and the fascines pushed or trodden firmly to the

bottom; it will of course be necessary to use longer and stronger sticks for this purpose. An expert laborer ought to make from 60 to 80 fascines a day; and when this work is properly directed, it may be performed with less labor and more expedition than with posts, caps and puncheons.

I am indebted for the above described mode of embankment, as well as for the use of fascines, to the late Mr. Vanhassett, an intelligent citizen of Holland, who having joined the patriotic party during the disturbances which took place in that country, soon after the close of our revolutionary contest, was obliged to abandon his country and took refuge in this State. He died here at an advanced age, regretted by all who knew him, after having imparted much valuable information on agricultural subjects.

Nearly forty years have elapsed since this gentleman attended in person and instructed my people to stop a breach in a bank, situated *on quicksand*, which had previously occasioned much unsuccessful labor; and which has ever since been perfectly strong. This circumstance is mentioned to prove the efficacy and durability of the work; and as I have since stopped a considerable number of large creeks, and repaired many breaches by this mode, I do not recommend it without sufficient experience.

A drawing representing a breach during the operation of being thus stopped is herewith presented. *(Vide: Plates annexed.)*

THOMAS PINCKNEY.

CULTIVATION OF CORN.

THE difference of opinion among farmers as to the best mode of cultivating corn, induced me some years ago, to give some attention to the subject. The reasons assigned, and the experience of many of the best agriculturists, in favor of the system of level cultivation, have convinced me that our present mode is not the best, and that it is susceptible of a decided change for the better.

I am perfectly aware, that to question the propriety of the *exclusive use of the plough* in the cultivation of corn will be laughed at, and that to intimate that *the ridging* of a corn field is not the most certain mode of ensuring a good crop will be denounced as mere "*book farming*," and hence entitled to no respect.

The present mode of cultivation is generally, to burn off the stalks and stubble that may be upon the ground—to break up with a shallow furrow—plant the corn without rolling or harrowing the ground—then harrowing the corn while small, and then by ploughing as often as may be deemed necessary. In ploughing the corn, the prevailing and almost universal rule is, to plough close to the corn hills, "to cut the fibres of the roots so as *to increase and strengthen the stalks, as you cut the roots of trees in an orchard by*

ploughing to make the tree grow vigorously! ! !—to throw the earth high up on the stalks, and to lay by the crop by ploughing three or four furrows between the rows, that the ground may be well ridged, *so as to retain the moisture about the hills of corn! ! !*"

The system of culture, that I believe is sustainable by reason and experience, is the opposite of all this.

1.—If the ground intended to be cultivated in corn has a sod upon it, it should be broken up in the fall or winter preceding, if the weather is suitable; if not, it should be ploughed in February, or at least in the first week of March. If not level it should be rolled, and if not mellow it should be harrowed before planting.

2.—If stubble or corn ground, no stubble nor stalks should be burned or removed, unless taken to the manure pile—should be ploughed six inches deep, and if not mellow should be harrowed.

3.—While small, the corn should be harrowed and the ground should be afterwards kept mellow and loose by the repeated use of the cultivator.

4.—On sod ground a plough should never be used in the cultivation of corn.

5.—On other ground, the plough should never be used, after the roots have extended any distance from the hills, and at no time unless indisponsably necessary to prevent the ground from baking.

6.—The fibres or small roots of the corn should not be cut; the cutting off of every fibre depriving the stalk of a part of its nourishment.

7.—The earth should not be thrown high up on the hills, as it induces the throwing out of additional spur roots. A very slight portion of mould may be put round the hill.

8.—The ground in the cultivation of corn should be kept as level as possible, to permit the roots to extend in every direction and to retain moisture. Ridging cuts the roots—prevents the extension of the surface roots beyond the middle of the rows—drains the water from the hills—exposes more surface to the action of the sun, and is therefore injurious to a crop in a dry season.

My own limited observation and experience, satisfy me of the correctness of the above rules to be obeserved, in the cultivation of corn, and I now offer the opinions of the ablest and most practical farmers in the United States, to sustain the position I have assumed.

Judge Buel, who for good sense—for a thorough knowledge of the science of agriculture, for general intelligence—practical experience—and for a most extensive knowledge and familiarity with the modes adopted by our agriculturists, was unequalled by any man in the United States, in speaking of the cultivation of this crop, expresses the following opinions:—

"The after culture consists in keeping the soil loose and free from weeds, which is ordinarily accomplished by two dressings,

and in thinning the plants, which latter may be done the first hoeing, or partially omitted till the last. The practice of ploughing among corn, and of making large hills, is justly getting into disrepute: for the plough bruises and cuts the roots of the plants, turns up the sod and manure to waste, and renders the crop more liable to suffer by drought. The first dressing should be performed as soon as the size of the plants will permit, and the best implement to precede the hoe is a corn harrow, adapted to the width of the rows, which every farmer can make. This will destroy most of the weeds and pulverize the soil. The second hoeing should be performed before or as soon as the tassels appear, and may be preceded by the corn harrow, or a shallow furrow of the plough, or what is better than either, by the cultivator. A slight earthing is beneficial, providing the earth is scraped from the surface, and the sod and manure not exposed. It will be found beneficial to run the harrow or cultivator a third, and even a fourth time, between the rows, to destroy weeds and loosen the surface, particularly if the season is dry."

"Some entertain a mistaken notion, that it is prejudicial to stir the soil among corn in dry weather, and others, that weeds serve to prevent the evaporation of moisture by a hot sun. The reverse of these opinions is true. The exhaustion of moisture by a plant is in the ratio of the surface of its leaves and stalks presented to the sun and air."

INDIAN CORN.

"There is no crop which habit has rendered more indispensable to the wants of our families and our farms than this. The late John Taylor, of Virginia, termed it our 'meat, meal and manure.' Holding this high rank in our farm economy, it is a subject of moment to adopt the best mode of culture. As many districts are shy in producing wheat, and as this crop is seriously threatened by the new (to us) wheat insect, it becomes more a matter of solicitude to render our corn crops productive. But as this grain demands more labor in its culture than other grain crops, so it is more important, on the score of profit, that it should be well managed, for if thirty bushels an acre be considered only a remuneration for the labor bestowed on the crop—all that the product falls short of this must be a loss—and all that it exceeds, a nett gain on the cultivation. The first consideration in regard to the corn crop, is to give it a dry mellow soil; the second, that this soil be rich, fat or fertile; and the third, that the seed be timely put in and the crop well taken care of. Neither wet grounds, nor stiff clays, nor poor grounds, will repay by their product, the labor required on a crop of corn. He who has no other but these, should not attempt to raise it as a field crop. He had better bestow his labor upon other objects, and buy his corn. We think the best preparation for corn is a clo-

ver ley, well covered with long manure from the barn-yard, well ploughed, and well harrowed. It is better to give sixty loads of dung to three acres than to ten, upon the ordinary lands of our neighborhood. The difference in product will not make up for the difference in labor. Corn can hardly be dunged too high. What we have to recommend, that is not common in the culture of this crop, is, that double the usual quantity of seed be applied—the number of plants to be reduced at the weeding—in order to insure threee or four stalks in each hill; that the roots be not broken, nor the manure thrown to the suaface by the plough, but that the harrow and cultivator be substituted for it, which will sufficiently mellow the surface and destroy weeds, and that the hills be but slightly earthed. By ploughing and hilling we conceive the manure is wasted, the roots broken and bruised, and limited in their range for food, the crop more exposed to injury from drought, and the labor increased."

In speaking of the plough in the cultivation of corn he again thus remarks—"*We do not use it. We think its use prejudicial in breaking the roots, and in limiting their range for nutriment.*"

Mr. James M. Sutton, of St. George, Delaware, who raised upon seventy-nine acres six thousand two hundred and eighty-four bushels of Corn, and who gives an accurate and detailed account of the condition and cultivation of each field, makes this remark in relation to the use of the plough:—

"In order to attest the advantage of the cultivator over the plough, for tilling corn, he had five rows in this field that he lapped the furrow to, with a plough, previous to going over it the last time with the cultivator. He soon discovered that the growth of these five rows fell short, in height of those adjacent, and yielded one-fifth less corn.

"There is no doubt but that the true mode of tilling corn, especially where sod ground is used, is to plough deep, and use nothing but the fallow and flake harrow for its cultivation. By not disturbing the sod ploughed down, it remains there as a reservoir of moisture, and an exhilarating principle throughout the season, to the growth of the corn.

JAMES M. SUTTON.

Upon Mr. Sutton's report of his crop, Judge Buel adds the following:—

"Note.—The management which led to the extraordinary product of corn, should be deeply impressed upon the mind of every corn grower. 1. The ground was *well* dunged with *long* manure. 2. It was planted on a *grass ley*, with one *deep* ploughing. 3. It was well *pulverised* with the harrow. 4. The plough was *not* used in the after culture, nor the corn hilled, but the cultivator only used. 5. The sod was not disturbed, nor the manure turned to the surface,

and 6. The corn was cut at the ground when it was fit to top.—These are the points which we have repeatedly urged in treating of the culture of this crop; and their correctness is put beyond question by this notable result. The value of lime and marl are well illustrated in the second experiment.—*Conductor.*"

Mr. Charles H. Tomlinson, of Schenectady, New-York, in giving an account of his experience, says:—

"The two last years corn has been raised in the following manner, on the Mohawk Flats, near this city. If in grass, the land is ploughed and well harrowed, lengthwise of the furrow, without disturbing the sward. The ground is then prepared for planting, by being marked out two and a half feet one way and three feet the other. The last season the field was rolled after being planted, with evident benefit, as it made it level. When the corn is three inches high, the cultivator is passed through both ways; and twice afterwards it is used in the same manner; no hills are made, but the ground is kept level. Neither hand-hoe, nor plough are used, after the corn is planted. Fields manured with coarse manure have been tilled in the same manner. Corn tilled in this way is as clean of weeds, as when tilled in the usual way: it is no more liable to be blown down, and the produce is equally good. It saves a great deal of hard labor, which is an expensive item in the usual culture of corn. Last October, ten rods were measured out, in two different places, in a corn field, or grass-land—the one yielded ten, the other nine bushels of ears. In one corn-field, after the last dressing in July, timothy and clover seed were sown, and in the fall the grass appeared to have taken as well as it has done in adjoining fields where it has been sown with oats."

Upon which Judge Buel again remarks: "All, or nearly all, the accounts we have published of great products of Indian corn, agree in two particulars, viz: in not using the plough in the culture, and in not earthing, or but very slightly, the hills. These results go to demonstrate, that the entire roots are essential to the vigor of the crops, and to enable them to perform their functions as nature designed, must be near the surface. If the roots are severed with the plough, in dressing the crop, the plants are deprived of a portion of their nourishment; and if they are buried deep by drilling, the plant is partially exhausted in throwing out a new set near the surface, where alone they can perform all their offices. There is another material advantage in this mode of cultivating the corn crop—it saves a vast deal of manual labor."

The preceding considerations justify us in recommending, that in the management of the Indian corn crop, the following rules be observed, or at least partially, so far as to test their correctness:—

1. That the corn harrow and cultivator be substituted for the plough in the culture of the crop.

2. That the plants be not hilled, or but slightly so—this not to prevent the soil being often stirred and kept clean, and,

3. That in harvesting, the crop be cut at the ground as soon as the grain is glazed.

Again, in reference to the system of level cultivation of corn, Judge Buel remarks:

"The experience of the last two years has been sufficient to admonish us, that without due precaution, our crops of Indian corn will not pay for the labor bestowed on the culture; and yet, that where due attention has been paid to soil, manure, seed and harvesting, the return has been bountiful, notwithstanding bad seasons. Having been uniformly successful in the culture of this crop, we feel justified in repeating some leading directions for its management."

AFTER-CULTURE.

In this the plough should not be used if the corn harrow and cultivator can be had, and if used, should not be suffered to penetrate the soil more than two or three inches. The plough tears the roots, turns up and wastes the manure, and increases the injuries of drought. The main object is to exterpate weeds, and to keep the surface mellow and open, that the heat, air and moisture may exert better their kind influences upon the vegetable matter in the soil, in converting it into nutriment for the crop. At the first dressing with the hand hoe, the plants are reduced to four, or three, in a hill, the surface is broken among the plants, the weeds carefully exterpated, and a little fresh mould gathered to the hill. At the second dressing, a like process is observed, taking care that the earthing shall not exceed one inch and a half, that the hill be broad and flat, and that the earth for this purpose be not taken from one place, but gathered from the surface between the rows, where it has been loosened by the cultivator.

As an evidence of the practical results of this mode of cultivating corn, I give you, in addition, the statements of two other farmers of their mode, and of the products of their land.

GREAT CROP OF CORN.

Georgetown ⋈ Roads, Kent Co. Md., Nov. 4th, 1837.

Mr. Editor,—I have just finished measuring the crop that grew this year on a lot of mine of five and a half acres, and have measured 105½ barrels and one bushel of ears, making 103 bushels of corn per acre. The corn is called Seaman's corn; it is a deep yellow, and not a gourd seed, but a very deep grain and small red cob, and has from twelve to twenty-four rows on the cob. I have taken great pains in selecting my seed for the last three years. I threshed off 230 bushels last May, and found from measurement it measured from the barrel five bushels and seven-eights of shelled corn. The

following is the manner in which I prepared the ground, &c. The soil is a stiff clay; one and a half acres of said lot was in clover last year, the balance in wheat. I put 265 two-horse cart loads of barn yard manure on it: the manure was coarse, made out of straw, corn stalks and husks, hauled into the yard in January and February, and hauled out in March and April, consequently was very little rotted. I spread it regularly and ploughed it down with a large conclage plough, (made by G. Cox, of Middletown, Delaware,) seven inches deep. I then harrowed it twice the same way it was ploughed. I then had the rows marked out with a small plough, three feet ten inches wide, and one an a half inches deep. I planted my corn from 18 to 22 inches apart, and covered it with hay just drawing the furrows over the corn, which covered it one and a half inches below the surface. When the corn was four inches high I harrowed it, and thinned it to two stalks in the hill; in about two weeks after harrowing, I cultivated it: about the 5th of June I cultivated it again, which was all the tillage I gave it. We farmers of the Eastern shore, count our corn by the thousand: 28,640 hills on my lot, and I think my corn would have been better had I planted earlier: I did not piant till the last of April. I think the planting of corn shallow and working it with the cultivator is much the best way, especially on clover ley. If you think the above worthy of notice you will please give it a place in your valuable paper.

WILLIAM MILLER.

"JUDGE BUEL.—*Dear Sir :*—I send you a statement of the expense and product of an acre of indian corn, raised by me, together with the mode of its cultivation. The corn was a little eight rowed yellow variety.

SOIL AND CULTURE.

The soil is a warm sandy loam. It was ploughed deep in the autumn of 1836. About the first of May, I carried on, and spread all over the ground, about thirty loads of stable and barn-yard unfermented manure, then rolled and harrowed the ground well, being careful not to disturb the sod, which was timothy, and mown the the summer preceding; and on the 9th and 10th of May planted the same, two and a half feet between the rows, and fifteen inches between the hills. It was dressed with ashes when it made its appearance above ground. On the 10th June commenced weeding and thinning, leaving from two to four of the best spears in each hill. The whole averaging about three spears in a hill. After this I ashed it again, using in all about ten bushels of good unleached house ashes. On the 10th of July commenced hoeing, and at the same time took off all the suckers—put no more about the hills than we took from them, but carefully cleaned out all the weeds from the hills. The seed was prepared by simply wetting it with warm water, and rolling it in plaster.

HARVESTING.

The corn was cut up on the 18th September at the ground, and shocked in small shocks; and on the 9th of October it was housed and husked, and subsequently threshed and measured.

PRODUCT.

Ninety-nine bushels of first rate corn, without even a nubbin of soft or poor grain, owing to the fact, probably, that there was no suckers on which to grow them."

H. HOPKINS.

I am aware that these views and the authority in their support, will find but little favor with a majory of corn raisers who insist upon the necessity of "*cutting the roots of the corn to make it grow.*" With such, I know that reasons unanswerable, and the experience of the most practical farmers in every State of the Union, weigh nothing as against their own *absolute knowledge.*

Notwithstanding this apparent unwillingness to tolerate innovations upon old established usages, I have confidence that there are some who will investigate the subject, and who will yield their own opinions, however long practiced upon, to the teachings of reason, and to the experience of the practical and intelligent farmers of the United States.

JOHN M. MILLIKEN.

For the Southern Agriculturist.

QUERIES RELATIVE TO PACKING SEA ISLAND COTTON.

Mr. Editor:—In the absence of that correct knowledge, which practice, aided by intelligence affords, and at the same time being under the impression, that our operative force, by the help of mechanical power, can be more economically and profitably applied in packing Sea Island Cotton, I submit through your pages the following queries, and hope, that either yourself or some of your subscribers, will answer them, and thus afford me the means either of strengthening or abandoning the views I have imbibed on the subject.

1st. Would not the substitution of the screw-press for packing long cottons, be a saving both of time and labor to the planter?

2d. What substantial reasons exist for preferring the pestle, to the press now in such general use in the short cotton districts?

3d. Have experiments ever been made, testing the relative merits of the two modes, and if so, which injured the staple the least?

We all know, that before the screw-press was invented, that cotton was packed for market by the hand and pestle; and as the largest and most practical planters of upland cotton give a decided

preference to the screw over the old process, we must conclude, that the last improvement is the best. Besides, to my inexperience it appears, that the edge of the pestle and the *heated feet* of the packer, would have a greater tendeucy to soil and produce knitters, unevenness &c. in the fibres of the cotton, than the steady and equal action of the screw-press.

But however plausible to myself may seem the many arguments I could adduce to enforce my objections to the present manner of packing long cotton in bags. I feel that I am treading on forbidden ground, after the confession made in the first part of this communication. Fot the present then, I will leave the subject, as I am without *results* to support my theories. And should some better informed planter take the trouble to reply to the above questions, he will much oblige—

A SEA ISLANDER.

July 9th, 1841.

For the Southern Agriculturist.

LIST OF THE AGRICULTURAL SOCIETIES OF SOUTH-CAROLINA.

Edingsville, June 15th, 1841.

Dear Sir:—I believe the following to be a correct list of the Agricultural Societies of South-Carolina, with the names of their Presidents:—

1. State Agricultural Society of S. C.; Whitemarsh B. Seabrook, President.
2. St. John's, Colleton, Agricultural Society; William G. Baynard, President.
3. Beaufort Agricultural Society; William Elliott, President.
4. Agricultural Society of South Carolina; ————, * President.
5. Agricultural Society of Barnwell; Hon. Angus Patterson, President.
6. Agricultural and Police Association of St. Andrew's; (name of the President unknown.)
7. Agricultural Society of Sumter; Hon. John P. Richardson, President.
8. Agricultural Society of Pendleton; Edward Harleston, President.
9. Monticello Planters' Society, Fairfield; Hon. William Harper, President.
10. Agricultural Society of St. Helena; Jos. J. Pope, President.
11. Cambridge (Abbeville,) Agricultural Society; Gen. Gillman, President.
12. Fairfield Agricultural and Horticultural Society; Osmund Woodward, President.

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* Lately deceased.

13. Wateree (Kershaw,) Agricultural Society; Colonel James Chestnut, President.

14. Agricultural Society of Abbeville; George McDuffie, President.

15. Fishing Creek (Chester,) Agricultural Society; Alexander Pagan; President.

16. Agricultural Society of St. Luke's; Dr. Jeremiah Fickling, President.

17. Greenville Agricultural Society; H. G. Johnson, President.

The last seven Societies have been formed within a few months.

Respectfully, yours,

WHITEMARSH B. SEABROOK.

HAYMAKING.

Scythes.—Procure a *good scythe* for every man and boy on the farm who is to do any thing at mowing. This work of cutting the grass is hard enough, with the best implement that can be made. And where the tool is poor, the work must be done either poorly or slowly—and in either case the farmer is losing more than the cost of furnishing a better instrument. *We* know not—(by the way, this term *we, I* am tired of, and shall, when it so pleases me, use the proper representative of my single self, *I*)—I know not that any one of the manufacturers of this article excels all others; some scythes from each factory are good, and others and not so;—if you are unfortunate enough to get a poor one, there is no economy in trying to worry through the season with it; gnawing off your grass; whetting every five minutes; fretting your own body, or that of your hired man; going to the grindstone every two hours; these attendants upon a poor scythe are such consumers of time that it is better to throw the soft brittle thing aside at once and purchase another. As a general rule the scythe that crooks towards the point works better than the straight one—at least it is so in my hands, The cast-off scythe should not be put into the hands of the boy who is *learning* to mow; he wants in his feeble and unpracticed hand, a sharper edge than that required by the man. Give him a *good* and a light tool; or else excuse him from his work.

Horse Rake.—The value of this implement for use on a farm of common inequalities of surface, and of common size is often over stated in the advertisements and puffs. But the *actual worth* of it justifies its purchase. We have used the revolving horse-rake for four or five seasons, on a farm where two acres is perhaps the amount mowed per day; the raking up of the thick green morning's mowing in the latter part of the afternoon, is a fatiguing appendage to the previous hard work of the day. The old horse who has been in the pasture all day, and has nothing to do at present but kick

flies, can greatly lighten and considerably shorten this labor: we generally save *in time* probably from 45 to 60 minutes, and *in strength* more than half. This saving towards the close of the day comes in very opportunely, and we would not part with the rake for twice its cost.

To manage this instrument skifully requires some practice—but as soon as one gets a little accustomed to it, he can lay the winrow very well. On large farms its use must be more valuable than on small ones.—Where grain is mowed and raked up, this rake is very convenient and comfortable; it takes all clean, and saves from *hard* hand raking.

This instrument deserves more extensive use than it has found hitherto.

Time of Cutting.—Where grasses are not lodged, it is well to cut when they are fairly and fully in blossom; but to avoid having some of them get far past this state before time can be found for securing, it is prudent to begin upon the more luxuriant fields before they reach full blossom.

Curing.—In the early part of the haying season, while the grass is quite green, and much time is required for curing, it is well to be busy in turning it up to wind and sun; help it along as fast as you can—but later in the season if the weather be good, it will be sufficiently cured the day after mowing without much assistance.

Some little matters amount to considerable in the course of the season;—in *turning up* hay, take the help of the wind; do this too, in raking;—in raking after the cart, regard the course of the wind and the direction in which the team will next move, and so arrange as not to be obliged to rake the ground over twice. In this simple labor of raking after the cart, I have found "head work" as profitable as in any of the operations upon the farm.

Salt.—Hay that would be liable to heat and sour because not quite cured, may often be mowed away with safety, if six or ten quarts of salt to the ton are applied. The use of salt upon nearly all the hay as it goes into the barn may be wise. I am inclined to the belief that a farm in my neighborhood on which salt has been very freely used in that way, had been greatly improved by it; that is, I think the manure has been much more efficacious in consequence of the salt applied to the hay. At home we find no hay so palatable to the stock as that which is cut young, three-fourths dried and well salted.

Clover.—This should be cured without much exposure to the sun. I can tell a story that goes to show that clover need not be thoroughly dried as many suppose. Last year, about the middle of June, we mowed some very coarse clover, scarcely beginning to blossom, and as full of sap as clover ever was. The weather was cloudy and foggy for several days, so that but little progress was made in curing it; it continued heavy and green; after four or five

days, and while the cocks were damp with fog we loaded it because the indications of rain were strong. It was taken to the barn, stowed away and very thoroughly salted. In four or five days it was dripping wet and burning hot: in fifteen days it was mouldy; in December, it was a hay preferred above all others in the barn, by "*old Bug Horn*," a dainty cow that was destined to the shambles; every animal in the barn would devour it greedily—and this too, when most of the hay, and all the corn stalks in the barn had been salted;—the salt taste was no rarity.

[*New-England Farmer.*

LOCALITY OF THE CANKER WORM.

The Nashville Agriculturist (as quoted in an exchange paper,) recommends taking up the earth round fruit trees to the depth of six or eight inches, and to the distance of eight or ten inches, for the purpose of burning it, in order to destroy the germ of the canker worm." Is the canker worm an inhabitant of Tennessee? Perhaps some of our readers can inform us in regard to this particular; and also the boundaries of that district on which the genuine canker worm (*Phalena vernata*) is found.

Deane in his New-England Farmer or Georgical Dictionary says, "It is not less than about fifty years since this insect began its depredations in New-England, in the parts which had been longest cultivated. But perhaps there is some reason to hope that Providence is about to extirpate them; for a little bird has lately made its appearance in some parts of the country, which feeds upon the canker worms. Should these birds have a rapid increase, the insect will be thinned, so as to be less formidable, if not wholly destroyed."

The second edition of that work was issued in 1797, "*soon* after the first," and perhaps we may set the time of their first appearance about one hundred years ago. It will be safe to conclude they were not newly created about that time, however; and we may ask whence they came? or what other tree supplied them with food before that period?

The little bird was doubtless the cedar bird—one of the greatest marauders of our land; but have no canker worms for him to feed on in this district, we should be glad to send him where he might find useful employment.

[*New Genesee Farmer.*

HORTICULTURE.

AN OUTLINE OF THE FIRST PRINCIPLES OF HORTICULTURE,

BY JOHN LINDLEY, F. R. S., &C.

I.—GENERAL NATURE OF PLANTS.

1. HORTICULTURE is the application of the arts of cultivation, multiplication, and domestication to the vegetable kingdom. Agriculture and Arboriculture are branches of Horticulture.

2. The vegetable kingdom is composed of living beings, destitute of sensation, with no power of moving spontaneously from place to place, and called plants.

3. Plants are organized bodies, consisting of masses of tissue that is permeable by fluids or gaseous matter.

4. Vegetable tissue consists either of minute bladders, or of tubes adhering by their contiguous surfaces, and leaving intermediate passages where they do not touch.

5. Tissue is called *Cellular* when it is composed of minute bladders, which either approach the figure of a sphere, or are obviously some modification of it, supposed to be caused by extension or lateral compression.

6. When newly formed it is in a very lax state, and possesses great powers of absorption; probably in consequence of the excessive permeability of its membrane, and the imperfect cohesion of its cells.

7. Cellular tissue, otherwise called Parenchyma, constitutes the soft and brittle parts of plants; such as pith, pulp, the spaces between the veins of leaves, the principal part of the petals; and the like.

8. Succulent plants are such as have an excessive developement of cellular tissue.

9. It may be considered the most essential kind of tissue, because while no plants exist without it, many are composed of nothing else.

10. Tissue is called *Woody Fibre* when it is composed of slender tubes, which are conical and closed at each end, and placed side by side.

11. Woody Fibre is what causes stiffness and tenacity in certain parts of plants; hence it is found in the veins of leaves, and in bark, and it constitutes the principal part of the wood.

12. *Vascular tissue* is that in which either an elastic tough thread is generated spirally within a tube that is closed and conical at each end; or rows of cylindrical cellules, placed end to end, finally become continuous tubes by the loss of their ends.

13. The most remarkable form of Vascular tissue is the *Spiral vessel*, which has the power of unrolling with elasticity when stretched.

14. Other kinds of vascular tissue are incapable of unrolling, but break when stretched.

15. Spiral vessels are not found in the wood or bark, and rarely in the roots of plants.

16. Vascular tissue of other kinds is confined to the root, stem, veins of leaves, petals, and other parts composed of leaves. It is not found in bark.

17. The common office of the tissue is to convey fluid or air, and to act as the receptacle of secretions.

18. Cellular tissue conveys fluids in all directions, absorbs with great rapidity, is the first cause of the adhesions that take place between contiguous parts, and is the principal receptacle of secreted matter.

19. Adhesion will take place at all times during the growing season, when the cellular tissue of two different parts, or of two different plants, is kept for some time in contact; but as none but tissue of nearly the same nature will adhere, grafting and budding, which are caused by the adhesion of contiguous parts, can only take place either between different varieties of the same species, or between nearly related species; and even then only when the corresponding parts of the scion or bud, and the stock, are placed in contact.

20. Woody fibre conveys fluid in the direction of its length, gives stiffness and flexibility to the general system, and acts as a protection to spiral and other delicate vessels.

21. Spiral vessels convey oxygenated air.

22. Other vessels probably conduct fluid when young, and air when old.

23. As the bodies of which all Tissue is composed are perfectly simple, unbranched, and regular in figure, having, when elongated, their two extremities exactly alike, they are more or less capable of conveying gaseous matter or fluids in any direction; and consequently, a current may be reversed in them without inconvenience: hence, inverted cuttings or stems will grow.

24. All parts of plants are composed of tissue, whether they be soft as pulp; or hard, as the bony lining of a peach.

25. With regard to Horticultural operations, the parts of plants should be considered under the heads of *Root* (II.); *Stem* (III.); *Leaf-buds* (IV.); *Leaves* (V.); *Flowers* (VI.); *Sexes* (VII.); *Fruit* (VIII.); and *Seed* (IX.)

II.—ROOT.

26. The Root is the part that strikes into the earth when a seed begins to germinate, and which afterwards continues to lengthen beneath the soil.

27. It is also the part which is sometimes emitted by the stem, for the purpose of absorbing nutriment from the atmosphere; as in Ivy, Air-Plants, Vines, &c.

28. It is distinguished from the stem by the absence of leaves in any state, of regular leaf-buds (IV.); of evaporating pores (or stomata (131.); and of pith in exogenous plants.

29. Therefore, such underground bodies as those called Tuber (61.) in the Potato; Bulb (96.) in the Onion and solid Bulb or Cormus (61.) in the Crocus, are not roots.

30. The office of the root is to absorb food in a fluid or gaseous state; and also to fix the plant in the soil, or to some firm support.

31. The latter office is essential to the certain and regular performance of the former.

32. It is not by the whole of their surface that roots absorb food; but only by their young and newly formed extremities, called *Spongioles.*

33. Hence the preservation of the spongioles in an uninjured state, is essential to the removal of a plant from one place to another.

34. A Spongiole consists of very young vascular tissue (12.,) surrounded by very young cellular substance. (5.)

35. It is therefore one of the most delicate parts of plants, and the most easily injured.

36. Hence whatever is known to produce any specific deleterious action upon leaves or stems, such as certain gases (298.) and and mineral or vegetable poisons, will produce a much more fatal effect upon the spongioles.

37. These organs have no power of selecting their food, but will absorb whatever the earth or air may contain, which is sufficiently fluid to pass through the sides of their tissue.

38. So that if the spongioles are developed in a medium which is of an unsuitable nature, as they will still continue to absorb, they cannot fail to introduce matter which will prove either injurious or fatal to life, according to its intensity.

39. This may often explain why trees suddenly become unhealthy, without any external apparent cause.

40. Plants have the power of replacing spongioles by the formation of new ones; so that an individual is not destroyed by their loss.

41. But this power depends upon the co-operation of the atmosphere, and upon the special vital powers of the species.

42. If the atmosphere is so humid as to hinder evaporation spongioles will have time to form anew; but if the atmosphere is dry, the loss by evaporation will be so much greater than can be supplied by the injured roots, that the whole system will be emptied of fluid before the new spongioles can form.

43. This is the key to Transplantation. (XV.)

44. As roots are destitute of leaf-buds (IV.,) and as leaf buds are essential to the multiplication of an individual (108,) it should follow that roots can never be employed for the purpose of multiplication.

45. Nevertheless, roots when woody, have, occasionally, the power of generating advantageous leaf-buds (IV.); and when this is the case, they may be employed for the purpose of multiplication; as those of Cydonia Japonica, &c.

46. The cause of this power existing in some species, and not in others, is unknown.

47. It is therefore a power that can never be calculated upon; and whose existence is only to be discovered by accident.

48. Although roots are generated under ground, and sometimes at considerable depths, yet access to a certain quantity of atmospheric air appears indispensable to the healthy execution of their functions. This is constantly exemplified in plants growing in the earth at the back of an ill ventilated forcing house, where the roots have no means of finding their way into the earth on the outside of the house.

49. It is supposed by some that the introduction of oxygen into their system, is indispensable to them as to animals.

50. It seems probable that the oxygen of the atmosphere, seizing upon a certain quantity of carbon, forms carbonic acid, which they absorb, and feed upon.

51. It is at lest certain that the exclusion of air from the roots will always induce an unhealthy condition, or even death itself.—This may be one of the reasons why stiff tenacious soils are so seldom suited to the purposes of the cultivator, until their adhesiveness has been destroyed by the addition of other matter.

52. Spongioles secrete excrementitious matter, which is unsuitable to the same species afterwards as food; for poisonous substances are as fatal to the species that secret them as to any other species.

53. But to other species the excrementitious matter is either not unsuitable, or not deleterious.

54. Hence, soil may be rendered impure (or, as we inaccurately say, worn out) for one species which will not be impure for others.

55. This is the true key of the theory of rotation of crops.

56. This also may serve to explain in part why light soil is indispensable to so many plants, and heavy or tenacious soil suitable to so few: for in the former case the spongioles will meet with little resistance to their elongation, and will consequently be continually quitting the place where their excrementitious matter is deposited; while in the latter case, the reverse will occur.

(To be continued.)

VEGETABLE GARDEN.

MELON—CUCUMIS MELO.

VARIETIES.

Green Citron, Murray's Pine Apple, Persian, Nutmeg, Star, Fine Late	Green fleshed	Large Yellow Canteleupe, Minorca, or Netted do. Pomegranate, or Musk Scented. Skillman's, or Netted Romane. Snake, (curious.)

THE Melon is an exotic plant, growing wild in Asia. It is cultivated in all the warm countries of Europe, and also in Africa and America, where its salubrious and cooling fruit is greatly esteemed.

For the varieties of the musk or Canteleupe Melons, prepare a piece of rich ground the first week in March; nanure it and give it a good digging; then mark out in squares of six feet every way; at the angle of every square dig a hole twelve inches deep and eighteen over, into which put about six inches deep of old rotten dvng; throw thereon about four inches of earth, and mix the dung earth well with the spade; after which draw more earth over the mixture, so as to form a circular hill about a foot broad at top. (For a definition of the term "hill," see article Cucumber.) When your hills are all prepared, plant in each towards the centre, six or eight grains of seed, distant two inches from one another, and cover them about half an inch deep. One ounce of good Melon seed will plant about one hundred and twenty hills.

When the plants are in a state of fowardness, producing their rough leaves, they must be thinned to two or three in each hill; draw earth from time to time round the hills, and as high about the roots of the plants as the seed leaves. As soon as the plants spread into branches, they should be stopped, by pinching off the top of the first runner bud; this will strengthen the plants and promote their perfecting the fruit early; after which keep the ground perfectly free from weeds by frequent hoeings.

There are many varieties of the Melon, highly estimated in Europe, which do not succeed in this country; the gardener should, therefore, plant only such as have been tested and found to produce good fruit here, or our superior old sorts may become degenerate. After a judicious selection is made, if caution be not used to plant the different sorts remote from each other, also from cucumbers, squashes, and gourds, degeneracy will infallably be the consequence.

WATER MELON.

MELON D'EAU.—CUCURBITA CITRULLUS.

Varieties.

Long Island. | Apple seeded.
Carolina. | Citron, for preserves.
Goodwin's Scarlet Imperial.

THE Water Melon, though by some considered a species of the former, is a distinct genus of exotic plants. They afford a very refreshing article of luxury in our warm summers. Dr. Pallas, in the account of his journey to the southern provinces in Russia, in 1793 and 94, speaking of a colony of Moravians at Sarepta, or Sapa, on the river Volga, says, "The ingenious inhabitants of this town brew a kind of beer from their very abundant and cheap Water Melons, with the addition of Hops; they also prepare a conserve or marmalade from this fruit, which is a good substitute for syrup or treacle."

In order to have Water Melons in good perfection, you must fix upon a piece of very rich light soil; prepare, plant and manage it in every respect as is directed for the others, only let the hills be seven or eight feet distant every way. One ounce of seed will plant from forty to fifty hills.

MUSTARD.

MOUTARDE.—SINAPIS.

Varieties.

White. | Black.

THE *Alba*, or White Mustard, grows spontaneously in the fields of England; it is also cultivated as a small Salad, as well as for seed. The seed yields from every hundred pounds, from thirty-three to thirty-six pounds of sweet mild oil.

White Mustard Seed is much used as a medicine, and persons subject to disordered stomachs often derive great benefit by taking a spoonfull of the dry seed, two or three times a day. Some use it in pickles, to which it imparts an agreeable flavour, and renders Cucumbers in particular more salutary.

The *Nigra*, or common Mustard, is also a native of England.—The condiment, called Mustard, and in daily use at our table, is prepared from the seed of this species.

The seeds of each variety may be sown in clean rich ground in April and May; and for a fall Salad in September, in shallow drills.

OKRA.

GOMBO.—HIBISCUS ESCULENTUS.

THIS fine vegetable appears no where to be so justly appreciated as in the neighbourhood of Charleston—here it furnishes a portion of the daily food of, we believe, at least three-fourths of the inhabitants of the city during its season. In fact, we know of no vegetable which is so generally used by both rich and poor, or which so justly merits the encomiums bestowed on it. When served up, simply boiled, we admit it is not the most palatable vegetable we ever eat, but in the form of soup, well boiled, with a proper supply of tomatoes, &c., we doubt whether it is excelled by any other in the world, either in flavour, wholesomeness, or nutriment. Surely our poor have cause of thankfulness, that our climate admits of its being grown in such quantities as it is. Although in such high estimation among us, yet we have rarely met with it any where else, and where we have, it has not been appreciated, chiefly owing to their ignorance of the proper mode of cooking, for except in the form of soup, (and that properly cooked) most persons would pronounce it a sorry vegetable, and unfit for frequent use.

The okra prefers a moist soil, well drained, and on such, if it be but moderately rich, the yield is very great. If such a spot can be had let it be ploughed, or formed into ridges, (or beds) if very low, and subject to much wetness, but if rather high and dry, let the surface remain level. In the former the rows must be from four to five feet apart, or the latter, they need not be more than from three and a half to four feet; some plant the seed in holes at the distance from two to three feet, others plant much nigher, and others again drill it. Whatever way it be planted, we recommend that it be thinned out so as to leave each plant separate, and at a distance of two feet apart. This is near enough, and if planted wider, too much ground will be lost in the first instance, although, in very rich ground, a greater produce is obtained at the close of the season, which, however, is at a time when all have been in some measure satiated; if planted nearer they soon run up and suffer from their contiguity to each other. The after culture is simply to keep them clear of weeds and the ground mellow. In gathering the pods for use, care should be taken to take off every one of a proper size, whether wanted or not. It is a very common practice to take as many as are wanted for immediate use, and the rest are left. These soon become woody, and unfit for the table, they are then left by some designedly for seed, by others through mere inattention or carelessnes. But it must be recollected, that a large portion of the nourishment of the plant will be immediately diverted from producing new pods to the perfecting the seed contained in these, consequently, if many of these pods be left on a

plant, it will soon cease to bear altogether. Let, therefore, every pod be carefully taken off as soon as it arrives at a certain size, and the plant will continue to produce a succession, which would not be the case, if not so managed. Those planted in the spring, generally exhaust themselves by the middle of August, and although they may bear a few, yet if they be wanted later, it is best to plant a successional crop in June, which will continue in bearing until destroyed by a frost.

ONION.

OIGNON.—ALLIUM CEPA, ETC. ETC.

Varieties.

White Portugal.	Yellow Dutch.
Silver Skinned.	Strasburg, or Flanders.
Deptford Red.	Madeira, (imported.)

OF the several varieties of Onions, the Yellow or Silver Skinned, and Deptford Red, are the best for a general crop. The bulbs are handsome, of firm growth, and keep well through the winter. The white Portugal are handsome for the table, very suitable for pickling; also to pull while young: and generally prove a very profitable crop.

Previous to sowing Onion seed for a general crop, the ground should be well prepared by digging in some of the oldest and strongest manure that can be got. The earlier this be done in the spring, the better; and the planting should not be delayed longer than the middle of April. The seed may be sown moderately thick in drills one inch deep, and twelve inches apart.

Those who cultivate onions for the sake of their bulbs, may use at the rate of four or five pounds of seed per acre.

As market gardeners, in the vicinity of large cities find it most profitable to pull a great proportion of their Onions while young, they generally require at the rate of eight or ten pounds of seed per acre of land.

When the plants are up strong, they should be hoed. Those beds that are to stand for ripening, should be thinned out while young, to the distance of two or three inches from each other; if a few should be required for use after this, those can be taken which incline more to tops than roots, and if the beds be frequently looked over, and the small and stalky plants taken away where they stand thickest, the remaining bulbs will grow to a larger size. The plants should be hoed at least three times in the early part of their growth; but if the season prove damp, and weeds vegetate luxuriantly, they must be removed by the hand, because after the Onions have begun to bulb, it would be improper to stir them with a hoe.

When the greenness is gone out of the tops of Onions, it is time to take them up, for from this time the fibrous roots decay. After

they are pulled, they should be laid out to dry, and when dry, removed to a place of shelter.

The small Onions may be planted in the spring following: even an Onion which is partly rotten will produce good bulbs, if the seed stems be taken off as soon as they appear.

The *Allium fistulosum*, or Welsh Onions, are cultivated for spring salad; they form no bulbs, but are very hardy. If the seed be sown early in September in rich ground, although the crops may die down in the winter, yet the roots will continue sound, and put up new leaves early in the spring.

The *Allium Cepa*, or common White and Red Onions are most generally cultivated by market gardeners as a substitute for the *Allium fistulosum*; they sow the seed in the spring and autumn months, the product of which is pulled and sent to market while young, and generally meets a ready sale.

The *Allium prolifelum*, or Tree Onion, is propagated by planting the bulbs in spring or autumn, either the root bulbs or those produced on the top of the stalks; the latter, if planted in the spring, will produce fine Onions. These may be planted in rows with a dibble, the same as Shallots.

The Potato Onion is of late introduction into this country. It does not produce seed as other Onions, but it increases by the root. One single Onion, slightly covered, will produce six or seven in a clump, partly under ground.

The bulbs are generally planted in the spring, from twelve to eighteen inches apart, but they will survive the winter, and yield better by being planted in autumn, if slightly covered with dung, litter, or leaves of trees.

INDUCEMENTS TO HORTICULTURE AS AN OCCUPATION.

Extracted from J. Breck's Address before the Westboro' Agricultural Society:—

There are many inducements to pursue the art of Horticulture, some of which will be considered.

It is a source of profit. Good fruit as an aliment, is conducive to health.

It is a source of much innocent pleasure. It has a good moral influence.

As to the profit—I think you must all acknowledge that this alone is a sufficient inducement for you to be up and doing. Your prospects are materially changed from what they were ten years ago. You are now within two hours of the best market in the United States, and can transport the most delicate fruit without the least injury. I would inquire how an acre of ground can be made to produce so much as when devoted to fruit? A neighbor of mine purchased a piece of ground—about an acre—for which he paid $300; it was covered with apple trees in their full vigor, of

the best varieties of fruit: he informed me that he sold in one year, enough to pay for it. I do not believe there is any crop that will pay so well as fruit. Fine fruit always commands the highest price in Boston; so high, indeed, that none but the affluent can afford it. I will give you the prices of a few varieties, the present season—[1840.]—Bartlett pears, 37½ to 50 cents per dozen, and St. Michael at 50 cents to one dollar, according to size and fairness. Peaches, such as I used to raise bushels of, from 25 cents to 75 cents per dozen; and small, miserable things, not fit to eat, for 12½ cents.—Plums, 25 cents to 75 cents per box, of about one quart. Strawberries and Antwerp Raspberries, hardly ever less than 37½ cents per box, unless they had begun to decay; and some magnificent varieties, 75 cents to $1 per box. Isabella grapes, from 12½ cents to 25 cents per lb. A few years since, Mr. Samuel Johnson, of Charlestown, received the sum of $49 29 cents for the produce of a single plum tree, of the White Gage species, the growth of one season. It should be remembered, however, that these are the retail prices. But supposing the retailer makes 100 per cent, it will leave a generous price for the grower. Good peaches have readily sold this season from two to four dollars per bushel. Porter apples 1 25 to $1 50 per bushel, and all other fine eating varieties in proportion. The large Iron pear, for baking, is hardly ever less than $4 per barrel, and I have known them as high as 6 or $8, and nearly as easily raised as Baldwin apples. There are many varieties of winter pears now cultivated in the neighborhood of Boston, equal in flavor to any of the fall varieties, which will bring almost any price asked. An Isabella grape vine trained to an humble cottage that has fallen under my notice, yields bushels of fruit annually—not only supplying the family, but leaving a surplus for sale, or distribution among friends. This combines the useful with the ornamental, as the vine loaded with its rich fruit is highly ornamental and grateful to the eye. There are individuals in Boston, with hardly a rod of land, whose income from grape vines trained to the house, yield sufficient to pay their taxes, amounting from 25 to $40 per year, and still reserving enough for their table and friends.

I was on the farm of Elias Phinney, Esq., of Lexington, a few weeks since, and observed a fine orchard of peach trees of about one acre: the ground between the trees had been cultivated from the time they were planted, which accounted for the very fine, fair fruit, by which the trees were bending to the ground. I was informed that the crops raised between the trees had paid from year to year the cost of cultivation and other expenses, leaving the receipts from the fruit a nett gain. I have been informed from good authority, that the sales from this orchard in one week amounted to more than one hundred dollars, at wholesale prices; what the total amount of sales has been, I kow not; but it must have been

three times that sum. This farm is 12 miles, or two hours from Boston; so you will perceive it is the same distance, in one sense, as from Westboro' to Boston. I have already given a description of Mr. Phinney's apple orchard, in the New England Farmer, which some of you take. It consists of about four or five hundred trees on ten acres of land, planted sixteen years ago; the ground has always been cultivated from the time the trees were planted. The fruit is mostly winter, a great majority of it the Baldwin.—Two years ago he sold 700 barrels of good sound apples from it, and upon a rough guess, should say that this year it would exceed one thousand. Apples are now worth in the market at least $1 50 per barrel: we bought some a few days since for a customer, in St. John's, and had to pay $1 75.

There need be no fear of overstocking the market with good fruit. There is always bad enough in all conscience. Our market has been crowded all summer with fruit prematurely picked, and transported by steam conveyance from New York, New Jersey, Pennsylvania, and even as far south as Norfolk, Va. By the time it reaches us it is in a decaying state, and consequently unwholesome and not fit for a rational creature to eat; yet it has found a ready sale at high prices and in large quantities. By steam communication fruit is conveyed from Boston to Maine and the British Provinces, and even to England. For under the genial influences of our sun, our fruit is much superior to theirs, and brings a higher price. The facilities the steam ships now give, will greatly extend our market, and all the surplus fruit that will be raised for an age to come, will meet with a ready sale.

There can be no doubt in regard to the profit which may be derived from raising good fruit. Even the common cider apples are now generally allowed to be more profitable for feeding swine and other stock than for converting into cider. If they were not, I would advocate the plan which some have inconsiderately carried into effect, that is of cutting down their orchards. The cider business, as formerly conducted, must have been a hard one, whether the cider was "hard" or not. The idea of picking apples and making them into cider, and then selling it at 75 cents per barrel, or laying up 20 or 30 barrels for family use, drinking as much more converted into cider brandy, as I have known a family do, is not so very agreeable. The best policy is to have none but the very finest varieties of fruit on the place, such as will find a ready sale at the best prices. The wind-falls and unsound fruit should be fed to the swine or converted into cider for vinegar. Orchards may be set out expressly for the use of swine and other stock. We know of a number of fine, thrifty, young orchards of sweet apples, set out by men who have long used them to great advantage for feeding their swine, and who consider a bushel of them equal to a bushel of potatoes: they are valuable also for cows and horses; and if

time permitted, could give accounts of many interesting experiments proving their value for this purpose; but must pass to the consideration of other inducements to pursue this pleasant occupation.

One great advantage arising from the cultivation of fine fruit is, that a free use of it is favorable to health. In the Annals of Horticulture, the advantages of it are set forth in the following language:—

"One of the best aliments and the best appropriated, to the different ages of life, is that which our fruit affords. They present to man a light nourishment, of easy digestion, and produces a chyle admirably adapted to the functions of the human body. Thoroughly ripe fruit eaten with bread, is perhaps the most innocent of all aliments, and will even insure health and strength."

"There are fruits which when perfectly ripe, can be eaten to excess, without inconvenience, such as grapes, cherries and currants; the other kinds never occasion ill consequences, if they are eaten only to satisfy the demands of nature."

As far as my own observation goes, I fully agree with the above writer. For, not having had the taste vitiated by *tobacco* or *ardent spirits*, I have always retained the high relish for fruits, which seems to be inherent to our natures, and have habitually used it freely when it has been in my power to obtain it. When toiling in the sun in our warm summer days, I have found there was nothing so grateful or refreshing as fruit. A plate of strawberries, currants, cherries or a melon, with a little bread and cheese, for a lunch, taken under a tree, fanned by the pure country air, is a luxury indeed; and will be found more effectual in recruiting the exhausted frame and quenching the parching thirst, than any thing else that can be named, even were the whole list of aliments or stimulating drinks called over. With fruit, a very little drink, even of cold water will be found necessary. Having had an abundance of cherries for a number of years past, I have eaten them in their season almost to excess, and found that health was improved by the use. I have eat them in the morning as soon as I have risen and could get to the trees, and at all times of the day. I have frequently made my breakfast on bread and cherries, or strawberries, with a little milk or coffee, and found myself equally refreshed as if I had taken more substantial food; and it is my candid opinion that if fruits were more generally raised, and formed a part of every meal, it would be found by all to be beneficial to health and at the same time a saving to the purse. A writer in the Medical and Surgical Journal says, "that instead of standing in any fear of a generous consumption of ripe fruits, we regard them as positively conducive to health. The very maladies commonly assumed to have their origin in a free use of apples, cherries, melons and wild fruit, have been quite as prevalent, if not equally destructive in seasons of

scarcity. All naturalists will testify to the importance of fruit seasons to the lower animals, particularly birds. When there is a failure or an insufficient supply, the feathered tribe are less musical, less numerous, and commence their migrations much earlier than when amply supplied with the delicate nutrition designed for them at certain periods of the revolving year.

"There are so many erroneous notions entertained of the bad effect of fruit, that it is quite time a counteracting impression should be promulgated, having its foundation in common sense, and based on the common observation of the intelligent.

"We have no patience in reading the endless rules to be observed in this department of physical comfort. No one, we imagine, ever lived longer or freer from the paroxysms of disease by discarding the dilicious fruits of the land in which he finds a home. On the contrary, they are necessary to the preservation of health, and therefore caused to make their appearance at the very time when the condition of the body, operated upon by deteriorating causes, not always understood, requires their grateful renovating influence.—Tyssot, in his advice to people upon their health, says: 'There is a pernicious prejudice with which all are too generally imbued. It is, that fruits are injurious in the dysentery, and increases and pro duce it. There is not peshaps a more false prejudice. Bad fruits and those which have been imperfectly ripened in unfavorable seasons, may occasion cholics and sometimes diarrhoea, but never epidemic dysentery. Ripe fruits of all kinds, and especially those of summer, are the true preservatives against this malady.' He farther says, 'that whenever the dysentery has prevailed, I have eaten less animal food and more fruit. And I have never had the slightest attack. Several physicians have adopted the same regimen.

"I have seen eleven patients in the same house; nine were obedient and ate fruit; they recovered. The grandmother and a child which she was partial to, died. She prescribed to the child burnt wine, oil, powerful aromatics, and forbade the use of fruit: it died. She followed the same course, and met the same fate."

The strawberry is considered by many medical men as a valuable medicine in many diseases; particularly for putrid fevers and pulmonary consumption. A free use of strawberries, it is said, will both prevent and cure the rheumatism. The celebrated Linnæus cured himself of the gout by persevering in a regimen of strawberries.

I could accumulate testimony on the utility of fruit, but I consder it unnecessary. Intelligent people no longer doubt upon the subject, and we hope the prejudices heretofore entertained against the free use of it will be done away.

MONOGRAPHY OF THE GENUS CAMELLIA, OR AN ESSAY ON ITS CULTURE, DESCRIPTION AND CLASSIFICATION;

BY THE ABBE BERLESE.

Translated from the French for the Horticultural Register, by Henry S. Dearborn.

[Continued from page 324.]

SEC. IV.—THE REMOVAL OF THE CAMELLIA FROM THE GREEN-HOUSE INTO THE OPEN AIR.

THE period of removing the Camellia from, and returning it to the green-house, as well as the exposition, which is given to it, during the summer, have a great influence on the health of the plant in winter. From the experience of several years, we have ascertained that the period when it should be removed from the green house, is that, when it has completely finished its first growth,—when the new wood is ripe, and when the buds have all appeared, which generally arrives at the end of June. The Camellia does not like the full influence of the sun's rays, but on the contrary, is pleased with a shady position and a free circulation of air. A northern exposure, where the first beams of the rising sun fall upon it, is the most eligible. If placed in a sunny position the buds are too rapidly formed, and the floresence is less beautiful, even if they are complete in their developement. The same precaution is to be observed in removing the Camellia from the green-house, as with all other plants, which are there cultivated. The most important is a shady and airy position; the most congenial kind of protection from the sun is a live hedge or a range of cedars, (Thuya orientalis or Arbor vitæ,) placed from eight to ten feet apart. The latter have the advantage of offering, by their evergreen foliage, the most desirable kind of protection, and have also a beautiful appearance, as by proper management, they can be made to form a sufficiently compact screen. With such a protected position, neither the injurious effects of the violence of the sun's rays, the winds, rain storms, or even the ravages of the frost are to be feared.

We are in the habit of allowing to the Camellia the advantages of such an exposition, until the end of August. Early in September, this plant should be exposed to the influence of the sun, during a greater portion of the morning, and even until near noon, and be so left, until it is returned to the green-house. This warm exposure confirms the last efforts of vegetation, consolidates the bulbs, and thus insures to the cultivator the pleasure he anticipated, as the reward for all the cares he had bestowed, on this admired plant.

THE RESTORATION OF THE CAMELLIA TO THE GREEN-HOUSE.

The heavy rains of autumn, which are cold and frequent, enervate the Camellia, and always render the success of a complete and

satisfactory florescence doubtful. The plants, should, therefore, be restored to the green-house as soon as the rainy season commences, and especially, as the nights become cold, although the days may still be warm, for this remarkable difference of temperature, is injurious to the shrubs and should, therefore, induce the amateur to restore them early in October, or later, if the season is mild; and he should always select the most pleasant day for this operation.

SEC. V.—THE PROPER KIND OF GREEN-HOUSE FOR THE CAMELLIA.

The Camellia being a rustic shrub, it prospers sufficiently well in all kinds of green-houses; but to render its florescence abundant and beautiful, it should be kept in a medium temperature, and placed, as near as possible to the light. Those plants which possess great vigor, and are from six to seven feet in height, flourish every where, if they are not checked, by accidental circumstances, as is frequently the case with those which have a lower exposition. But the young plants which have recently been produced by grafting, or which are not more than a foot high, as well as all the delicate and rare species, require a brilliant light to bloom well. It is true, that such a position offers serious inconveniences, and among others, a stroke of the sun in the spring, which at any moment may scorch and injure the health of the plants. But these accidents can be prevented, by extending daily, about eight or nine o'clock in the morning, cloths over the glass, and withdrawing them as soon as the sun disappears from the green-house.

The double roofed green houses, which are called *English* or *Chinese*, are excellent for small Camellias; but they do not present an agreeable appearance; still it is well to have one of them, to make the Camellia flourish, until the period it comes into flower, when it can be removed to the large green-houses.

The green-house for the Camellia should be furnished, like all others with a stove or furnace, well built of masonry, the funnel of which should be of brick and of a square form, placed in the interior, against one of the walls;—that in front is most usually selected for the purpose. The entrance to the furnace should be on the outside, so that the fire can be attended to, without entering the green-house. This precaution is very necessary to prevent the smoke from being admitted, as its injurious influence is irreparable; the fall of the leaves and buds being the immediate consesequences.

The confined heat in a green-house produces a vapor, which attaches itself to the ceiling, glass and walls, where it is condensed and falls in drops upon the plants. This concentrated vapor, is injurious to the Camellias which receive it, if they are suffered thus to remain, for any considerable time. In order to promptly remove it, it is useful, when the exterior atmosphere will permit, to open some of the ashes, and kindle, at the same time, a fire in

the furnace, to temper the fresh admitted air. If this mode is impracticable, in consequence of the intensity of the cold, it must be attempted to remove the moisture, where it is collected on the glass, by the use of cloths, fastened to a staff. When it is necessary to keep up fire for a long time, on account of the cold, it must not be forgotten to water the Camellias, which are near the furnace and funnel, and even all the others, if it is requisite; for if the earth becomes too dry, it causes, as we have experienced, irreparable disasters.

Section 6.—THE VENTILATION AND TEMPERATURE OF GREEN-HOUSES.

The air being one of the most indispensible elements, to the prosperous condition of plants, it is requisite that it be temperate and circulate freely in the green-house. An active, dry and cold air is injurious to the Camellia; while a humid and warm air is favorable to its vegetation. A thermometer, therefore, should be placed in the green-house to regulate its temperature; and although the Camellia may be exposed to some degrees of cold, without suffering; still to render its florescense certain and perfect, it is necessary that it should enjoy a temperature, of from 45 to 50 degrees of Fahrenheit's thermometer.

As long as the exterior atmosphere is near those degrees,—which should be indicated by a good thermometer exposed to the north in the garden, the doors and ashes of the green-house may be left open; but they should be carefully watched and shut as soon as the external temperature descends to only ten or twelve degrees above the point of congelation.

It is useful to give air to the Camllias every morning, even when the weather is a little cold, if the sun is bright above the horizon. As the leaves of the Camellia, present quite a large, shining porous and slightly humid surface, they attract the dust, which is continually circulating in the green-house, and soon become covered with it. These foreign bodies prevent the exercise of their absorbent functions, or rather, obstruct the pores, which are destined to inspire the surrounding nutritious gases, as well as to expire those which are disengaged from the plant. It is therefore necessary, that from time to time, during the winter, this dust should be removed from the plants. The following are the modes of doing it.

Some persons wash the leaves with a piece of sponge; but while the sponge, if it is not continually cleansed, absorbs the dust of the leaves, and communicates to those to which it is successively applied, it also leaves a little humidity on them, which immediately collects the dust again.

The best method is, to use a small piece of fine and dry linen or cotton cloth with which the leaves are to be lightly and carefully rubbed; they immediately acquire all their natural lustre and present a renewed appearance of health and vigor.

While the Camellia is in the green-house, and even when in the open air, a kind of moss, which is often produced by the quality of the water used in irrigation, is formed, which covers the superior surface of the earth in the pots. It is, therefore, necessary, when the plants are removed from, or restored to the green-house, that this moss should be carefully taken off, and with it as much of the earth as possible, which is to be replaced, with such, as has been prepared, for the purpose, in the manner, that has been described, and which has a vivifying effect on the plants.

SECTION 7.—THE INSECTS WHICH ARE INJURIOUS TO THE CAMELLIA.

The Camellia is attacked, both when in the green-house, and exposed to the open air, by several small insects, which are the *aphides*, (plant lice) *formicæ*, (ants) *kermes*, (a small beetle of the coccus genus) *cochineal*, also a beetle of the coccus genus,) &c.

It is not an easy task to destroy these various kinds of insects, and the process we shall describe requires great care and attention.

The Aphides are developed early in the spring; they attach themselves to the most tender shoots, and cover them so completely, that the bark seems to have changed its color; and are constantly pumping the abundant sap, with which the young branches are filled, and they consequently languish. The leaves fade and soon perish, if the insects are not either removed by the cultivator, rains or certain winds which are fatal to them. They are readily destroyed by burning tobacco in the green-house, washing the infected branches with soap suds, or, what is still better, crushing them with the fingers.

Although it is said that the formicæ live at the expense of the aphides, we believe there are some of the species, which are nourished by the tender twigs of the Camellia; besides, their numerous progeny is very inconvenient, especially when they form their habitations, as is smetimes the case, in the Camellia pots. Green-houses can be readily cleared of these insects, by partly filling small phials with honey and water, which they are thus induced to enter, in vast numbers, where they are drowned.

The Kermes,—commonly called the orange-bug, which is often seen on the leaves and bark of the young branches, and the cochineal, which attaches itself to the new shoots, and in the axils of the young leaves, draw out all the sap. These enemies are to be destroyed, by visiting the Camellia often, early in the morning, and crushing them with a small flat piece of wood.

Earth worms easily enter the pots, disturb the roots and decompose the compost. The method of preventing them from entering the pots, consists, in placing a piece of slate under each, supporting them on planks, or making a bed of fine gravel, or river sand, two or three inches thick, on which they are to stand.

When these worms are in the ball of earth, which surrounds the roots, and they cannot be exterpated, by removing it from

the pot, they may be compelled to leave it, by watering once or twice the roots with a slight decoction of tobacco. We have employed, with success, a very slight solution of quick lime: but this method if it is not perfomed with great precaution, will comletely destroy the most delicate roots, when the plant inevitably perishes.

Section 8.—FLORESCENCE OF THE CAMELLIA AND MANNER OF FORCING IT.

The natural epoch of the florescence of the Camellia is, generally, from the month of December, until the end of March. Still, by an artificial culture, to which it readily yields, if it is desired to calculate the phases of its vegetation and follow its progress, plants may be made to bloom, in succession, from the commencement of September, to the end of April. The best course to be pursued, to insure success, in this extra-natural culture, is as follows:

When it is desired that a plant should bloom in September, its vegetation should be excited, at least a month earlier than common. For this purpose, in the month of February, the plants, which have not any flower bud, and which are in a vigorous and sufficiently forward condition, should be selected and repotted, in the manner which has been described, if it is necessary, and then placed in a position, where the heat can be augmented, in order that they may by this artificial means, commence vegetation promptly and finish their first growth, a month sooner than usual. They are to be removed from the green-house, by the end of May, instead of the close of June, and placed in a less shady exposition, than is the general custom.

In April, the plants which give indications of blooming, should be retained in a green-house, which must be ventilated, during the day, but closed at night; and they must be protected against the solar rays, by means of cloths, or light mats, and kept in a uniformly temperate and equal atmosphere. In proportion as the exterior air diminishes in temperature, that within must be elevated. By this mode of culture, if it is well conducted, abundant and beautiful flowers will be obtained, in the month of September. Besides those plants, which are ready to bloom, may be placed toward the end of next month, in a hot bed which is kept moderately warm,—care being taken to screen them from the sun, and give them air in the day time, and they will continue to bloom in succession.

When it is desirable to retard the florescence of the Camellia, all the operations which have been described, are but to be performed a month later, to make them bloom naturally; and by the means of a less elevated artificial atmosphere, but which, however, is constantly equal, the development of the flowers may be retarded for several weeks.

(To be continued.)

AN ENUMERATION OF THE PRINCIPAL GENERA OF GREEN-HOUSE AND CONSERVATORY PLANTS; WITH THE SOIL EACH GENUS THRIVES IN.

INCLUDING THE MODE OF PROPAGATION, WHETHER FROM SEEDS, ROOTS, CUTTINGS, &c., &c.—BY C. M'INTOSH.

(Continued from page 333.)

	Soil.	*Mode of Propagation.*
Hopea	Loam and peat	By cuttings.
Hovea	Peat and loam	By cuttings, and sometimes from seeds.
Hovenia	Peat and loam	Cuttings of the ripe wood strike freely.
Hoya	Rich light soil	By cuttings in a brisk heat. Every leaf taken close off the plant and potted will make a plant, if kept in a good heat
Hudsonia	Peat soil	This plant is difficult either to keep or to increase. Cuttings sometimes will root.
Hydrangea	Rich soil	Most readily by cuttings, either of the young or old wood.
Hypericum	Peat and loam	Cuttings of the young wood strike freely.
Hypoxis	Sandy loam & peat	By offsets, and by seeds.
Iberis	Rich light soil	By cuttings freely.
Ilex	Rich soil	By cuttings of the ripened wood.
Illicium	Loam and peat	Cuttings of the young wood strike freely.
Indigofera	Peat and loam	Cuttings of the young wood strike freely.
Ionidium	Loam and peat	By cutttngs.
Ipomæa	Rich light soil	By cuttings in spring, in a bottom heat.
Iris	Peat and loam	By the suckers which they throw up from their roots.
Isopogon	Peat and loam	Like most other plants allied to the genus *Protea*, they are difficult to propagate. Seeds are sometimes imported by which a stock is procured, but cuttings seldom answer.
Ixia	Peat and loam	By offsets, from the bulbs; while in an inactive state shoulb be kept dry.
Ixodia	Peat and loam	Youug Cuttings root freely.
Jacksonia	Peat and loam	By cuttings of both young and ripened wood.
Jasminum	Peat and loam	Cuttings root freely.
Jenkinsonia	Turfy loam and peat	By cuttings.
Justicia	Peat and loam	Cuttings root freely.
Kerria	Peat and loam	By cuttings and suckers from the roots.
Kennedia	Peat and loam	By seeds, and by cuttings.
Kiggelaria	Loam and peat	Cuttings of the ripened wood strike freely.
Lachenalia	Loam and peat	By offsets from the bulbs.
Lambertia	Peat and loam	Ripened cuttings taken off at a joint before they begin to prow afresh, may be struck, but not without difficulty.

	Soil.	*Mode of Propagation.*
Lanaria	Sandy loam & peat.	By dividing the roots.
Lapeyrousia	Light rich soil	Cultivated like *Ixia*, &c.
Larochea	Sandy loam	By cuttings.
Lasiopetalum	Peat and loam	Cuttings of the ripened wood strike freely.
Lavendula	Peat and loam	Cuttings of the young wood strike freely.
Lavatera	Peat and loam	From seeds, which often ripen, and also by cuttings of the ripened wood.
Laurus	Peat and loam	Cuttings of the ripened wood strike root in a bottom heat pretty freely.
Lebeckia	Peat and loam	By cuttings of the young wood.
Lechenaultia	Peat and loam	By cuttings of the young wood.
Leonotis	Rich soil	Cuttings of the young wood strike freely.
Leontice	Peat and loam	By seeds, and by dividing the roots.
Lepidium	Light soil	By seeds or cuttings.
Leptospermum	Peat and loam	By seeds and cuttings; the latter is preferred, as affording plants that will sooner come into flower.
Leucadendron	Light loam	Sometimes increased by cuttings, but not without difficulty. Imported seed are sometimes to be procured.
Leucopogon	Peat and loam	The very tips of the young shoots will strike with care, but not readily.
Leucospermum	Light loam	Same as *Leucadendron*.
Leysera	Peat soil	By cuttings
Liatris	Peat soil	By seeds, or dividing the roots.
Lightfootia	Loam and peat	Cuttings of the young shoots strike freely.
Ligustrum	Loam and peat	Cuttings of the young wood strike freely, or by inarching on the common *Privet*.
Linaria	Peat and loam	Cuttings strike freely.
Linum	Peat and loam	By cuttings of the young wood.
Liparia	Peat and loam	The very tips of the young shoots should be chosen for cuttings, which with care, will strike roots.
Lobelia	Any rich soil	Readily by cuttings.
Loddigesia	Sandy loam and peat.	Cuttings of the young wood strike freely.
Logania	Peat and loam	Cuttings of the ripened wood will root.
Lomatia	Peat and loam	Ripened cuttings taken off at a joint will strike root.
Lonicera	Rich light soil	Cuttings of the ripened wood strike root freely.
Lotus	Peat and loam	From seeds which ripen in most species freely, and also by cuttings of the young wood.
Lychnis	Peat and loam	By cuttings or seeds.
Lycium	Loam and peat	Ripened cuttings strike freely.
Lythrum	Peat and loam	By cuttings of the young wood.
Magnolia	Peat soil	By cuttings of the ripened wood, and some of them by inarching or budding on the common sorts.
Mahernia	Loam and peat	Young cuttings strike freely.

	Soil.	*Mode of Propagation.*
Malva	Loam and peat	By seeds and by cuttings of the young wood.
Marica	Loam and peat	By offsets and also by seeds.
Marrubium	Light rich soil	Cuttings strike freely.
Massonia	Sandy loam and peat	By seeds and by offsets from the bulbs.
Mathiola	Light soil	Readily by cuttings.
Maurandia	Light rich soil	Freely by seeds, and also by cuttings.
Medicago	Peat and loam,	By seeds and by cuttings.
Melaleuca	Peat and loam	Ripened cuttings not too old strike pretty freely. Seeds are also sometimes ripened, which readily vegetate.
Melanthium	Sandy loam and peat	By seeds or offsets.
Melia	Loam and peat	By seeds which often ripen.
Melianthus	Peat and loam	Readily by cuttings.
Menispermum	Loam and peat	Cuttings propagate readily.
Mesembryanthemum,	Light soil	Freely by cuttings, if kept dry.
Mespilus	Loam and peat	By cuttings.
Metrosideros	Peat and loam	Best from seeds; cuttings of the ripened wood sometimes strike, but not without difficulty.
Mikania	Peat and loam	By cuttings.
Mimulns	Light rich soil	Readily by cuttings.
Mirbelia	Sandy loam & peat.	By cuttings, and also by seeds, which sometimes ripen.
Monsonia	Turfy loam	By cuttings, or pieces of the root.
Montinia	Loam and peat	By cuttings.
Morinia	Light rich soil	By seeds, and by dividing at the root.
Mundia	Sandy peat	Cuttings of the young wood strike freely.
Murraya	Peat and loam	By cuttings in a bottom-heat,
Myoporum	Loam and peat	By cuttings.
Myrcia	Loam and peat	Cuttings of the young wod strike freely.
Myrsine	Loam and peat	By cuttings.
Myrtus	Peat and loam	By cuttings not too ripe.
Nandina	Peat and loam	Cuttings with their leaves not shortened, root freely.
Nemesia	Rich soil	Cuttings of the young wood strike freely.
Nerium	Rich soil	By cuttings of the young wood,
Nicotiana	Rich soil	By seeds.
Nivenia	Sandy loam	Not readily; ripened cuttings, however sometimes succeed.
Ocymum	Light rich soil	By cuttings.
Œdera	Peat and loam	By young cuttings.
Œnothera	Peat and loam	Cuttings root freely.
Olea	Rich soil	By cuttings, but more readily by grafting on the common *Privet*.
Ononis	Peat and loam	Cuttings strike freely, and seeds are sometimes ripened which vegetate freely.
Onosma	Peat and loam	By cuttings.
Ophiopogon	Peat and loam	By dividing the roots.
Origanum	Loam and peat	Cuttings strike freely.
Ornithogalum	Loam and peat	By offsets from the bulbs.
Osteospermum	Peat and loam	By cuttings freely.
Osyris	Loam and peat	Cuttings of the ripened wood strike freely

	Soil.	*Mode of Propagation.*
Othonna	Peat and loam	Cuttings strike freely.
Oxalis	Light rich soil	Sometimes by seeds, and generally by offsets from the bulbs.
Oxylobium	Peat soil	Cuttings strike root with care, and some of the species ripen seeds.
Pallasia	Light rich soil	By cuttings.
Pancratium	Light rich soil	By offsets from the bulbs, and sometimes from seeds.
Passerina	Peat and loam	Young cuttings strike freely.
Possiflora	Rich soil	By cuttings, which should be taken off while very young; some of the species perfect seeds by which hybrides are produced.
Patersonia	Peat and loam	By dividing at the root.
Pavonia	Peat and loam	As seeds often ripen, it may be increased by them, or by cuttings of the young wood.
Pelargonium	Light rich soil	By cuttings, seeds, &c.
Pentzia	Peat and loam	By cuttings.
Persoonia	Peat and loam	Not readily; cuttings of the ripened wood sometimes root.
Phlomis	Peat and loam	By cuttings.
Phormium	Peat and loam	By offsets from the root.
Photinia	Peat and loam	By cuttings of the ripened wood, and also by grafting or inarching on the different kinds of *Pyrus* or *Mispilus*.
Phylica	Peat and loam	Cuttings of the young wood strike freely,
Phyllolobium	Loam and peat	Cuttings of the young wood will root freely.
Pimelea	Sandy peat	By cuttings of very young wood, and also by seeds.
Pinckneya	Peat and loam	Cuttings root freely.
Pinus	Any ordinary soil	Most of the species are difficult to perpetuate otherwise than by seeds; some will, however, strike by cuttings.
Pisonia	Loam and peat	By cuttings.
Pistachia	Loam and peat	Cuttings of the ripened wood strike root, but require a long time.
Pittosporum	Peat and loam	Cuttings, which do not, however, strike very freely.
Platylobium	Peat soil.	Seeds are sometimes ripened, which produce fine plants; they are also propagated by cuttings.
Plectranthus	Peat and loam	Young cuttings root freely.
Plectronia	Peat and loam	Cuttings of the ripened wood strike root.
Plumbago	Peat and loam	Cuttings root readily in a bottom heat.
Podolepis	Loam and peat	By dividing near the root.
Podocarpus	Peat and loam	Not readily propagated by cuttings.
Podolobium	Sandy peat.	Best by seeds, although cuttings strike pretty freely.
Pogonia	Sandy peat	By offsets from the roots.

THE ORCHARD.

EFFECTS OF STOCKS ON GRAFTED FRUIT.

A gentleman who is paying particular attention to fruit, requests us to republish the following article from our second volume, as he has not that volume on hand. In this article we gave in some cases our own experience and observations, and in other cases the result of what appeared to be accurate experiments of others. We hoped that it would elicit from fruit growers and nurserymen some remarks on the several subjects presented, as they are highly important, and should be thoroughly investigated. But it was extensively copied without comment.

A convenient opportunity is now presented for observations, and our readers who have given particular attention to the growing of fruit, are requested to give their views on the effects of stocks on the fruit of grafted trees.

EFFECTS OF GRAFTING FRUIT.

That scions will produce fruit similar to trees, from which they are taken, is a fact well known; but many persons are mistaken in supposing that the scions govern wholly, and that the stocks have no influence. The scions govern mostly, but as the stocks have some effect in many respects, it is important to horticulturists to examine the subject and learn all the various effects produced by stocks, as in many cases it may be turned to great advantage, and in others much disadvantage may be avoided.

STOCKS HAVE AN EFFECT AS TO BEARING YEARS.

Scions cut from trees that bear in alternate years, and put into stocks that bear every year, or in alternate years, different from the trees from which the scions were taken, will bear every year, though they may have their full and scanty years of bearing. This principle will be of great advantage to the fruit grower, as it will enable him to raise fruit annually, of those kinds that without grafting, or by grafting on stocks that bear in the same alternate years, would only yield their fruit every second year.

STOCKS EFFECT THE SCION IN HASTENING OR RETARDING THE RIPENING OF FRUIT.

Fruit that ripens too late, may be forwarded by engrafting it on stocks that ripen their fruit earlier, and the reverse. This may be turned to good account, and the same fruit may be had in succession by grafting on stocks that ripen their fruit at different periods. We have seen accounts of fruit being accelerated in its ripening one month by this method. Some fruits that are too late for our northern climate, might be ripened here by engrafting on earlier stocks. In this way some excellent kinds of grafts that are now too late might be ripened in season.

STOCKS PRODUCE DEFECTS ON GRAFTED FRUIT.

Stocks that have produced fruit with rotten cores, or with water cores, will, in some cases, produce the same effect in a similar degree on fruit engrafted on them. We noticed an apple tree that produced water cores in abundance; some of the apples were full of water, which could be plainly seen through the peel. The Newton Sweeting was engrafted in the tree and some of the apples were water cores.

STOCKS EFFECT THE COLOR OF FRUIT.

We have seen apples of the same kind of different colors owing to the scions being set on different stocks. Some of the apples were red, others of a bright yellow.

STOCKS AFFECT THE QUALITY OF FRUIT.

Scions of the Baldwin apples were set in two trees; one tree bore very unpleasant fruit, the other bore apples of a very sharp sour, but they had a very rich spicy flavor when mellow; we now have apples from both trees, and we can perceive a difference in the fruit, and that which grew on the last named tree, resembled the fruit of that stock in their peculiar flavor. Butter or melting pears are grafted on quince stocks in order to give solidity to the flesh; some kinds are made valuable in that way which otherwise would not be worth cultivating. It is evident that sweet apples, in order to attain their sweetness in full should be grafted into sweet apple stocks. We seldom see sweet apples from scions so sweet as natural fruit, owing, doubtless, to their being grown on sour stocks.

STOCKS HAVE AN INFLUENCE IN INCREASING OR DECREASING THE SIZE OF FRUIT.

We have seen accounts of fruit being increased one half in size by being grafted in trees that produced much larger fruit. Perhaps the increase in size was owing in part to the thrift of the scion, as sometimes an improvement is made in that way without any influence of the stock, otherwise than by supplying an abundance of sap. We grafted the winter sweeting into a sweet apple tree, that the sweetness of the fruit might not be depreciated; the tree produced excellent fruit, very sweet and good to keep, but it was very small—the scions produced good fruit that kept long, but it was as small as the fruit of the stock; whether that was its common size or not, we do not know, but suppose it was owing in a measure, to the stocks.

These facts will be very profitable to the growers of fruit, and if any of our readers learn from experiment or observation, any thing that shall corroborate or illustrate these principles, or tend to contradict them, we should be pleased to hear from them on the subject.—*Yankee Farmer.*

HOUSEHOLD AFFAIRS.

WE now come to jams, which require quite as much attention and care as jellies, though the art of making them calls forth perhaps less of the confectioner's skill. The process of boiling them must be watched continually, lest the small quantity of liquid which they contain should dry up, and the jam acquire an empyreumatic taste, which f. equently occurs when the fruit is overboiled. For all jams, unless otherwise directed, the sugar should be put into the water and clarified with egg, as directed for the apple jelly, but not boiled up afterwards.

APRICOT JAM.

Let the fruit be just in maturity, but not over ripe. Remove the skins, then cut the apricots in halves. Crack the stones, take out the kernels, bleach them in boiling water, and then pound them in a mortar. Boil the broken stones, skins, and parings, in double the quantity of water required for the jam. Reduce it in the boiling to one half of its original quantity. Then strain it through the jelly-bag. To each pound of prepared apricots, put a quarter of a pint of this juice, a pound of sifted loaf sugar, and the pounded kernals. Put it on the fire, which should be brisk, and stir the whole with a wooden spoon until it is of a nice consistence, but without being very stiff, or it would have a bad flavour. Put it immediately into pots, and let these stand uncovered during twenty four hours. Then strew a little sifted sugar over the upper surface of the jam in each pot, and cover it with a paper dipped in brandy. Tie clean writing paper over each pot, and on the paper write "Apricot Jam."

PEACH JAM.

This confection should be made of the cling-stone peach in preference, it being more juicy and of a higher flavour than the other kind of peach, the stone of which separates from the pulp. Treat the peaches exactly in the same manner directed for apricots, using the same quantity of sugar.

NECTARINE JAM.

Pare, stone, and cut the Nectarines, and prepare the juice in the manner directed for the apricot jam. To every ounce of the kernels add two bitter almonds, and instead of pounding, cut them into small bits and mix them with the jam over the fire. In other respects proceed as already indicated.

[*Magazine of Domestic Economy.*

PROCEEDINGS OF AGRICULTURAL SOCIETIES.

At a meeting of the St. Andrew's Agricultural Society, held on the 6th July, the following Report was read and ordered for publication in the Southern Agriculturist.

RAWLINS RIVERS,
Corresponding Secretary.

The Agricultural Committee beg leave to Report, that in the performance of their duty, they inspected the crops of the members of this Society on the 2d and 3d inst., and found them generally in good order. In the division embraced in the first day's ride, we found the crops rather grassy, in consequence of the late rains, (which was believed to be more frequent and much harder than on the other sections of this Island) and the planting of slips, we found no crop, however, but could be soon put in good order, provided the dry weather continued for a few days. The cotton crop in general is well grown, but not so well fruited. In comparing it, however, with the last year, we are of opinion, that it is decidedly better, the plant being more healthy and better fruited. But taking 1839 for comparison, it is inferior; the crop of that year being much in advance of the present. The corn crop promises well; the late rains have materially benefited the crop, both early and late planting were suffering much for the want of it. The late planting we found broken and irregular, some tassling and some grains just coming up. We indulge the hope, however, that a full supply of this necessary grain will be realized. The potato crop, on the whole, is bad in three instances; however, (Mr. H. Rivers, Mr. J. E. Rivers, and Mr. Paul C. Grimball,) we had the pleasure of seeing as fine crops of root potatoes as we ever witnessed at this season of the year. This highly valuable root we fear, has been rather neglected; we are sorry to come to that conclusion, for we conceive this crop to be of the utmost importance to the planters of this Island. We remember, in former times, when our fathers paid more attention to this crop, and their practice of planting slips late in the season, for the express purpose of seed, with vines taken from the early slips, we humbly think worthy of being followed. In comparing the number of acres planted on the Island in 1831 and 1833, with the present year, we find the following results, to wit:—in 1831, we find reported, as having been planted, 1,327 acres in cotton, 895 acres in corn, 183 in root potatoes, and in peas and slips 500 acres; making in all, 2,905 acres in cultivation, on thirty five plantations; and in 1833, we find reported 1,528 acres in cotton, 771 acres in corn, 180 acres in root potatoes, and about 500 in peas and slips; making in all, 2,979 acres in cultivation, giving 74 acres more than 1831 in the aggregate. In 1841, we report 1,830 acres in cotton, 969 acres in corn, 179 acres in root potatoes, and allowing 500 acres for

slips and peas, the same reported in 1831, will give 3,478 acres in cultivation this year; making 300 acres more cotton than 1833, and 200 acres more of corn; and 500 acres of cotton more than 1831, and 74 acres more corn; making the aggregate 499 acres more than 1833, and 573 acres more than 1831; and this increase upon 30 plantations, showing 5 settled plantations less than 1831. Mr. John E. Rivers, and Mr. Paul C. Grimball's cotton were two of the best, (in the estimation of your committee) they had seen, Mr. Horace Rivers' root potatoes stands first of that crop.

Your Committee return their thanks to the members for the attention and interest they exhibited throughout the inspection, making the performance of an arduous duty pleasing and agreeable.

Submitted by your Committee,
J. RIVERS, *Chairman.*

AT a meeting of the Agricultural Society, on the 20th July, the following tribute of respect to the memory of Mr. HUGH ROSE, late President of the Society, was offered by R. W. ROPER, Esq., unaninously adopted, and ordered to be published.

JOSEPH. F. O'HEAR, *Secretary.*

MR. PRESIDENT:—Since the last meeting of this Society, busy death has been amongst us. He has singled another victim from the most elevated and esteemed of this association. But three weeks ago, the President of this Society directed its deliberations, partook of our festivities, and gladdened us by his cheerful intercourse. At this subsequent meeting we mourn his loss. Though he left us full of years and the rewards of a well spent life, we yet yield him with reluctance and with sorrow.

When I look around me and survey the venerable rank of ancient members of this Society so thinned by death, men whose presence and support gave dignity and success to the institution, I cherish feelings of redoubled interest and affection for the few whom Providence has spared. And the bright example of those who have departed shines for us as a beacon on eternity's ocean. We will not let the fleeting hours pass without gazing at its fires and marking our track upon the chart, by which safety and happiness is to be secured. With the indulgence of this Society, I will therefore offer the following reflections, as suggested by this melancholy occasion:

To recall the loss of departed friends is a melancholy duty. To revive the form and features of those whose presence gave gladness and whose voice awakened attention, renews again the wailing of grief. Still it appertains to humanity to sigh after the noble presence which filled the apple of the eye, and moved in the

sphere in which we have been accustomed to behold it with distinction and usefulness. When all this has passed like a vision, and the fountains of sorrow have watered the desolate place of the departed, a purer and more christian principle bids us to seeks solace in their virtues. It is then the heart receives cheering influences, that grief is softened into resignation, and a holy aspiration fills the breast to emulate the example of a well spent life.

The lot of this Society has been to boast many models of worth of refinement and of virtue, and alas, to deplore that two many have been shattered. The vocation in which its members are engaged, exposes them to a treacherous climate and uncertain tenure of life, and they literally grow up like a flower and are cut down. Urged by duty or necessity, the peril is still met with all its disastrous consequences. Yet something more than interest lures to fatal snare, the impulses they obey are purer and more generous —the lovely scenes of agricultural life, entrance with their beauty while they teach the philosophy of nature.—The bright sky or gushing floods equally proclaim the providence of God—the waving harvest demonstrates his bounty—the breeze wafts the murmuring music of the woods, while songsters of the air proclaim their joy and thankfulness. All tends to repose aud contentment. Reflection steals over the senses, and lifts the mind to Him from whom these bounties flow. We behold His care, and learn our dependence—we feel His liberality, and imbibe the principles of charity and good will, while every sound admonishes to gratitude.

From such allurements we pass away, and in what speedy, melancholy succession. But a few months since, we mourned the decease of a venerable President of this Society, and now death has singled out his successor. Our sympathies are again awakened for an equally venerable man and respected President, the late Mr. HUGH ROSE. This esteemed friend has been associated with the South-Carolina Agricultural Society for twenty years, and contributed, by his zeal in the cause of Agriculture, to foster its advancement and benefit science. From early life, the avocation of Mr. Rose was that of a Rice Planter. In this pursuit, he displayed great assiduity, and, in agriculture generally, made many useful experiments. His knowledge and experience he communicated with perfect willingness, and all the perspicuity which distinguished its attainment. Success crowned his efforts, and after disencumbering a large estate, he sailed for England, and passed many years among its wealthy and distinguished society.

On Mr. Rose's return to America he still preferred the walks of private life, and resumed the pursuits of an agriculturist. The cares of business were relieved by books, by the manly amusement of the chase, or those elegant fascinating games which divert the fancy while they invigorate the frame. His country seat became

the resort of elegant hospitality, rendered more seductive by his own polished manners.

His death creates a melancholy chasm. By his bland address and amiable deportment he added charms to social intercourse, and won the esteem of the young, and the respect of every member of this society. Temperate in his habits, he preserved to the end of his life his activity and vigor of mind, and claimed none of the indulgences that appertain to advanced age. We mourn his loss as our venerated President, as a useful member of our society, as a pleasing and intelligent companion, and one of the finest specimens of a finished Carolina gentleman.

In honor of his memory, I beg leave to offer the following resolutions:—

Resolved, That this Society deplore the loss of their late venerated President, Mr. Hugh Rose.

Resolved, That in the death of Mr. Rose, we lose one of the props of this Society—a dignified gentleman and intelligent associate.

Resolved, That this Society condole with the family of the deceased on the deep bereavement they have experienced, and that these feelings and sentiments be communicated to them on this melancholy occasion.

At a meeting of the Agricultural Society of South-Carolina, on the 20th July, John H. Tucker, Esq., was elected President, in the place of Hugh Rose, Esq., deceased, R. W. Roper, Esq., Vice President, and F. D. Quash, Esq., Corresponding Secretary.

GARDENER'S CALENDAR FOR AUGUST.

VEGETABLE GARDEN.

Sow Peas, early Dutch and other varieties of Turnips, Ruta Baga, Onions, Cabbages, Cauliflowers, Brocoli, black Spanish Radishes, Carrots, Beets, Parsnips, Salsafy, Lettuce and Endive. Plant Snap Beans. Transplant Cabbages, Cauliflowers, Brocoli, Celery, Ruta Baga and Endive.

Remarks.—Not much can be expected from Peas sown in this month, as they will be very much crippled by the high winds and rain which we usually have, but where they are wanted a few may be ventured. The Beets and Spinach are liable to the attacks of the worms which destroy their leaves; should they escape these they will be very fine.